DEPARTMENT OF CITY PLANNING 100 LARKIN STREET SAN FRANCISCO CALIFORNIA 94102

San Francisco City Planning Commission

Environmental Impact Report

TOWER NO. 2

SAN FRANCISCO HILTON HOTEL

Draft

EE 79.257

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Written comments should be sent to the Environmental Review Officer, 45 Hyde St., San Francisco, CA 94102

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I. SUMMARY

A. PROJECT DESCRIPTION

The proposed project site vacant Lot 27 in the northwest quarter of Assessor's Block 325, fronts on O'Farrell and Taylor Sts. The remainder of the block contains the San Francisco Hilton Hotel and Tower. The proposed 27-story, 318,900 gross sq. ft. (above ground, excluding mechanical space) Hilton Tower No. 2 would be designed to function as an integral part of the Hilton complex. The basement under the proposed project would contain mechanical and storage space and a new service lobby and freight elevator which would be connected to a remodeled loading area and additional truck loading dock in the existing basement. A porte cochere (covered entrance driveway and unloading area) on O'Farrell St. on the ground floor of the three-story base building would lead into a Grand Lobby with front desk, administrative offices, expanded coffee shop, a bell station and luggage handling areas designed to serve the entire Hilton Hotel. The next two floors of the base building would contain ballroom and public function-room space. The new tower would be set back atop the base building from the existing Hilton Hotel to its east and south, and would be connected to the original Hilton by a skybridge at the 10th floor. The landscaped roof area on the base building to the south of the proposed tower would have two tennis courts. The 320 ft.-high tower would have 23 floors of guest rooms, containing a total of about 410 keyed guest rooms, and a mechanical floor (4th floor).

No demolition would be necessary as the site is now vacant. Excavation and construction would be expected to begin in 1980 and continue for approximately 24 months until project completion and occupancy in 1982.

B. ENVIRONMENTAL EFFECTS

The proposed project would be consistent with current hotel uses on the block and across Taylor St. and would be compatible with office and parking uses across O'Farrell St. It would comply with the Zoning Use and Height and Bulk District limitations of the site. As a Planned Unit Development (PUD), the project would require a Conditional Use authorization. Cumulative effects of the proposed project and the proposed Hotel Ramada and Holiday Inn in the area could include changes in some businesses in the Tenderloin District from resident-serving to tourist-serving, and an increase in property values and rents.

No architectural resource would be demolished or altered, nor is disturbance of subsurface archaeological resources expected to occur as a result of the project. The proposed porte cochere would facilitate the circulation of vehicular traffic around the Hilton block. The 320-ft. high proposed Tower No. 2 would provide a stepped visual transition between existing portions of the Hilton Hotel and Tower. The scale and character of the building would differ from older existing development, but would be similar to that of the existing Hilton Hotel and Tower. The proposed Tower No. 2 would not be a major intrusive element on the City skyline. Cumulatively, the three proposed hotel developments would increase the visual density of development in the area.

The project would contribute to the shadowing of sidewalks on Mason, Taylor and O'Farrell Sts. in the vicinity of the Hilton block at various times of the day and seasons of the year. It would not shade any public plaza or park. Northwest winds would increase by about 10% on O'Farrell St. near the site and would decrease near Ellis and Taylor Sts. Westerly winds would increase on O'Farrell St. near the site and decrease on Taylor St. and Mason St. The proposed porte cochere would have a low wind-speed ratio.

Construction and operation of the project would increase demands for water, sewer services, solid waste disposal, and police and fire protection. The demands could be met by the existing systems and would not require additional personnel, equipment or facilities.

The project would provide about 135 person-years of construction employment and result in permanent employment for about 150 persons, many of whom would be expected to be minorities. Most of the jobs would be low- to moderate-income and could be filled by existing San Francisco residents. The project would generate between $679,000 and $741,000 in net property, hotel, sales, payroll and franchise taxes annually to the City and County of San Francisco. The 410 guest rooms in the proposed Tower No. 2 would help to reduce the present lack of transient-tourist hotel facilities in San Francisco. Until sufficient hotel rooms are built to meet demand, cumulative hotel development in the area could increase the rate of conversion of older residential hotels to transient hotels, should the current moratorium expire. Cumulative proposed hotel development would not be expected to create an oversupply of hotel rooms according to projected hotel-room demand.

Construction trucks would temporarily increase traffic on the access streets and haul routes, particularly during peak hours. Project-generated traffic would increas traffic on adjacent streets ranging from about 3% to 6%, and would increase Muni ridership by about 0.3% over the 1982 base condition; tour and charter bus loading and unloading would be removed from the Muni Diamond Lane on O'Farrell St. and relocated to Mason St. The project would contribute to cumulative impacts on regional air quality, local traffic volumes and transit ridership due to proposed hotel developments. Construction-related emissions would temporarily exceed particulate standards. In the long-term, attainment of air quality standards (in particular, carbon monoxide) would be impaired by increased numbers of vehicles on and around the site. Driving of soldier beams for about two weeks, and operation of construction equipment would temporarily raise local noise levels near the site and contribute to cumulative noise produced by construction of the proposed Hotel Ramada and Holiday Inn in the vicinity.

Project construction activities and fabrication of materials would require about 4.6 trillion BTUs - at source during construction (including excavation and foundation work). During project operation, the Tower No. 2 would require about 4.7 million kilowatt hours of electricity and about 15 million cubic feet of natural gas per year. Fuel use by project-generated traffic

would be about 210,000 gallons of gasoline and 64,000 gallons of diesel fuel per year.

The building foundation would probably not require driven piles. The site could be subject to strong ground shaking. The building would be designed to meet earthquake standards of the San Francisco Building Code; the Uniform Building Code standards would be followed when they are more strict.

The additional 410 rooms of the proposed Tower No. 2 would constitute about a 3% increase in quality hotel space in downtown San Francisco and about a 4% increase in the Union Square hotel district. The tourist industry would be stimulated by cumulative proposed hotel developments in the area. New employees of the cumulative development would increase the demand for housing in the Bay Area. The project-related demand for housing in San Francisco is projected to be about 30 units.

C. MITIGATION MEASURES

The intermediate height of the proposed tower would provide a stepped transition between the original Hilton Hotel and existing tower. Internal security and fire protection systems, trash compaction and recycling of solid wastes are proposed to reduce demands on community services.

The building would be designed to operate in conformity with State energy standards. Energy conserved by modifications of the heating ventilation and cooling systems of the existing hotel would provide about one-half of the energy demand of the proposed project.

The O'Farrell St. porte cochere would replace Mason St. as the main hotel entrance. This would permit tour- and charter-bus loading to be moved from O'Farrell St. to Mason St , thus facilitating Muni diamond-lane operations on O'Farrell St. The project sponsor would be willing to participate in a fair and appropriate mechanism to fund peak-hour transit services, should such a mechanism be developed by the City. Preferential parking for carpool vehicles and adequate bicycle parking would be provided for employees.

Unpaved surfaces would be wetted during excavation to hold down dust. The loads of haul trucks woud be covered to reduce spillage and streets adjacent to the site would be swept to remove dirt. Construction activities would not begin until after 8:00 a.m.

D. ALTERNATIVES TO THE PROPOSED PROJECT

The no-project alternative would preserve options for future development at the site. Conditions described in III, pp. 22-68 of this report, would generally continue.

An alternative design could be developed so that the proposed tower would be set back 10 ft. on the base building from the O'Farrell St. property line. The porte cochere could be redesigned so that vehicles would enter from Taylor St. and exit to O'Farrell St.

An alternative could be developed on the site which would include both apartment units and hotel guest rooms and public function space. Sixty 610-sq. ft. one-bedroom apartments could be built on floors 5 through 9 at 12 units per floor. The remaining floors in the proposed tower would contain about 320 hotel guest rooms.

The project design could be revised to better relate the proosed Tower No. 2 to the existing Hotel and Tower. A pedestrian entrance to the Grand Lobby could be provided on Taylor St.

II. PROJECT DESCRIPTION

A. OBJECTIVES OF THE PROPOSED PROJECT

The San Francisco Hilton Joint Venture composed of Hilton Hotels Corporation, which operates hotels throughout the United States, and the Prudential Life Insurance Co. of America, proposes to construct and operate a second tower as an addition to the existing San Francisco Hilton Hotel and Tower. The Hilton Hotel Tower No. 2, designed by John Carl Warnecke and Associates of San Francisco, is intended by the project sponsors to provide hotel rooms for the convention and tourist trade, and to provide a fair return on invested capital. The existing hotel now frequently operates at capacity and the demand for rooms is expected to increase with the completion of the George R. Moscone Convention Center. The San Francisco Hilton Joint Venture wishes to make use of the opportunity afforded by the proposed construction to build an enlarged Grand Lobby fronting on O'Farrell St. to replace existing lobby facilities for the entire Hilton Hotel and Tower, and to unify all parts of the existing hotel complex, built at different times, thus enabling the hotel to function smoothly as a single entity.

B. LOCATION OF THE PROPOSED PROJECT

The San Francisco Hilton Hotel and Tower is on Assessor's Block 325, which contains about 113,500 sq. ft. and is bounded by O'Farrell, Mason, Ellis and Taylor Sts. (see Figure 1). The proposed Tower No. 2 would entirely cover Lot 27 in the northwest quarter of the block. The vacant site contains about 28,100 sq. ft and was formerly occupied by the San Francisco Downtown Airlines Terminal.

The project site is in the northeastern portion of the Tenderloin District and fronts on Taylor and O'Farrell Sts. The site is about 3-1/2 blocks from the Powell St. Station of the Market St. subway at Hallidie Plaza, which serves

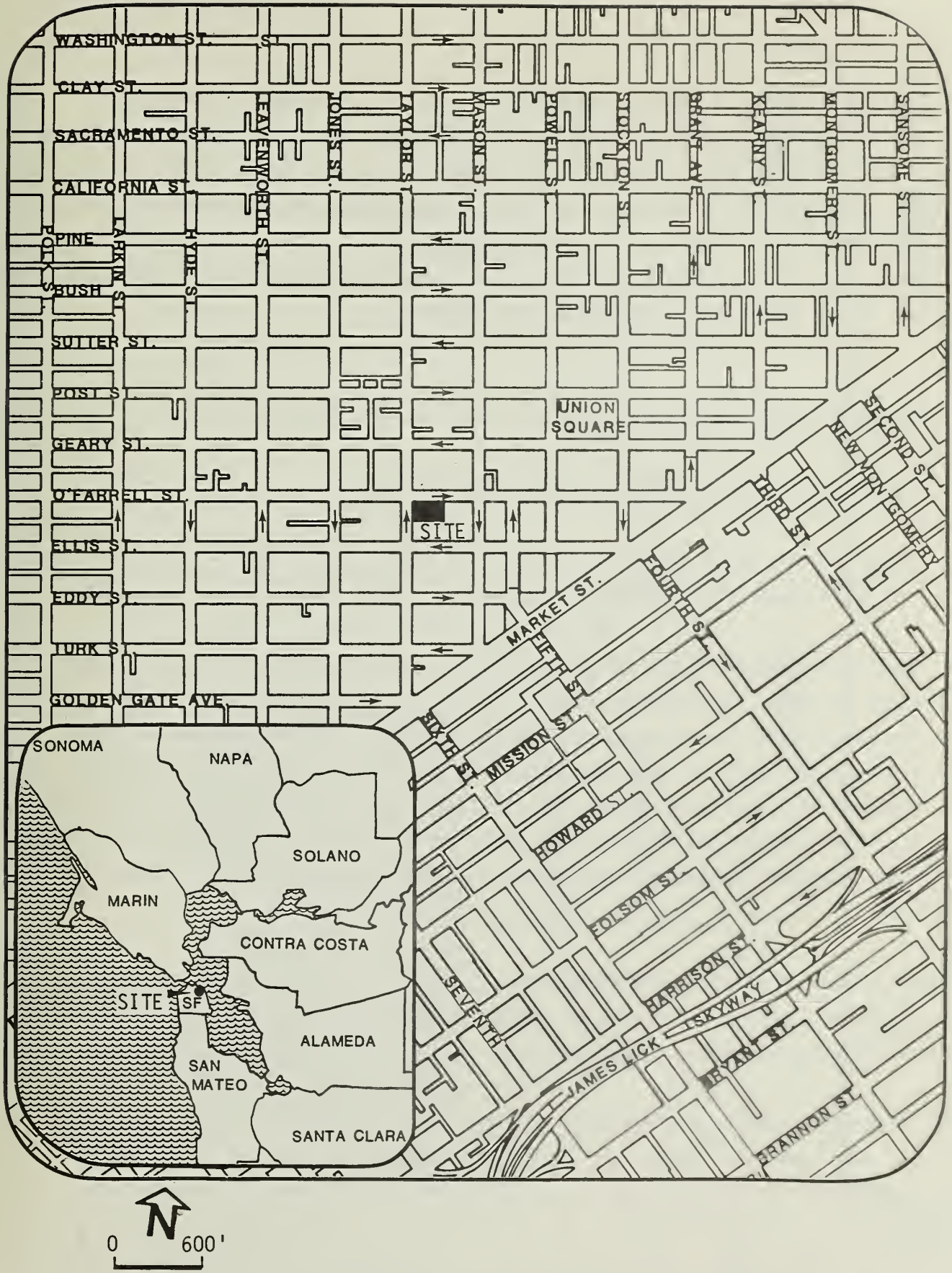


FIGURE 1: SITE LOCATION IN RELATION TO THE BAY REGION AND TO DOWNTOWN SAN FRANCISCO

the Bay Area Rapid Transit system (BART) and the Muni Metro light rail system. The Airporter bus service is available from a new terminal at Taylor and Ellis Sts. The Municipal Railway (Muni) provides service on O'Farrell, Mason and Ellis Sts. adjacent to the project block. Golden Gate Transit and SamTrans lines are within six blocks of the site. Connections to other regional transit systems, including A-C Transit, Southern Pacific Railroad and the Marin ferry boats are provided by the Muni.

C SITE AND BUILDING PLAN

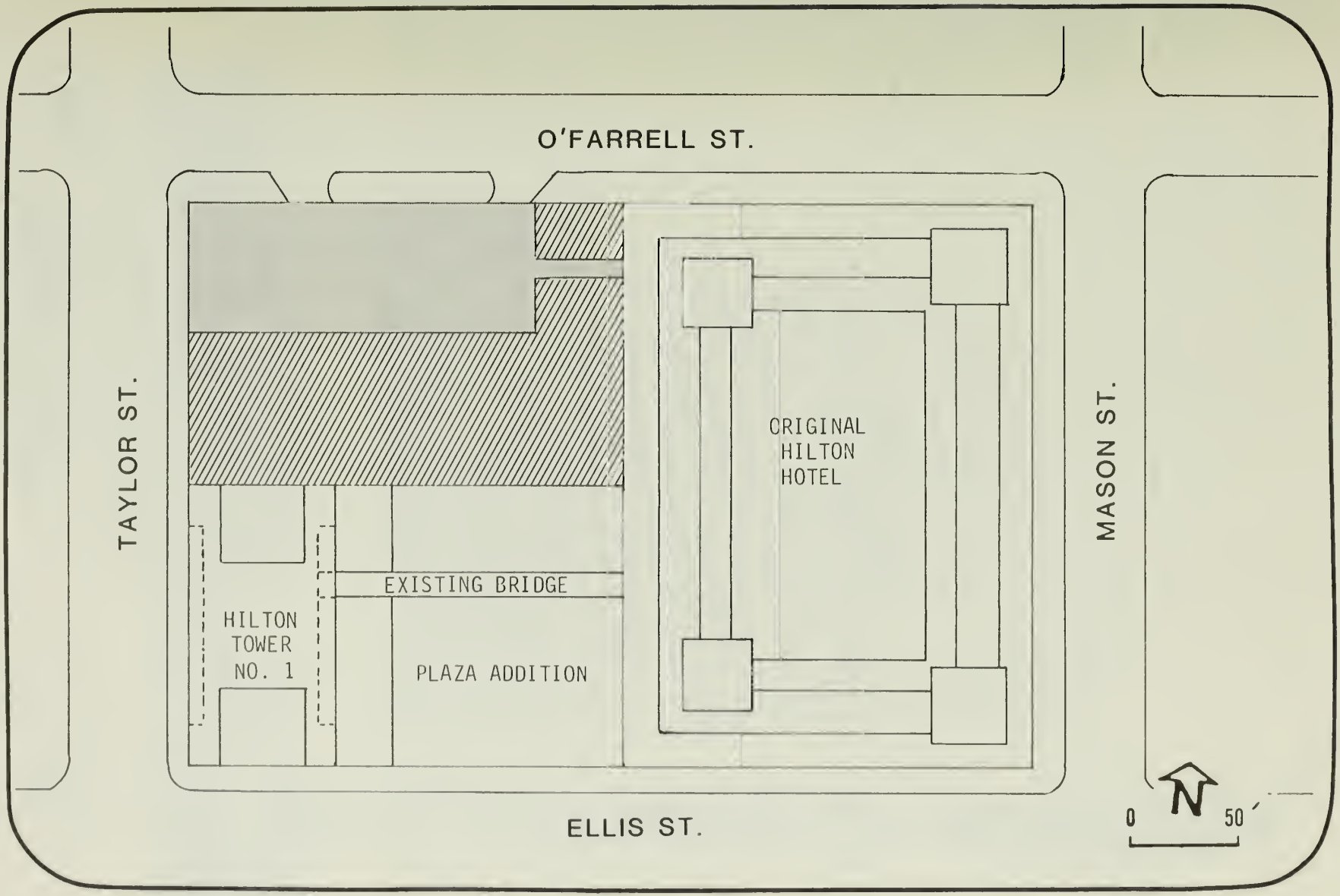
THE EXISTING SAN FRANCISCO HILTON HOTEL AND TOWER

The proposed project would be an addition to the existing San Francisco Hilton Hotel and Tower (see Figure 2), which consists of three distinct elements.

The first element is the original 19-story Hilton Hotel, built as a motor hotel in 1963. It occupies roughly half of the block and fronts on Mason St. The guest rooms are arranged around the exterior of the building; a motor entrance on Ellis St. provides access to parking on the upper-level guest room floors. This building houses the existing main lobby and registration area, the main kitchen and 14 floors of guest rooms. The upper four floors of guest rooms surround a central court which contains a swimming pool at the 16th floor.

The second element is the three-story Plaza Annex fronting on, but with no access to, Ellis St., which was added in 1966 adjacent to the southwest corner of the original hotel. This addition contains exhibit space and a ballroom.

The third element, the 40-story Hilton Tower, was added in 1969. The Tower includes general storage, a restaurant, kitchen and support areas, and a loading area and rental space. It also contains an exhibit area and guest rooms and a second entrance lobby on Taylor St., connected by a corridor to the original lobby. The Hilton Tower is connected to the original Hilton Hotel via a sky bridge at the 16th floor (pool level).



LEGEND

Proposed Tower and Sky Bridge

Proposed Base Building

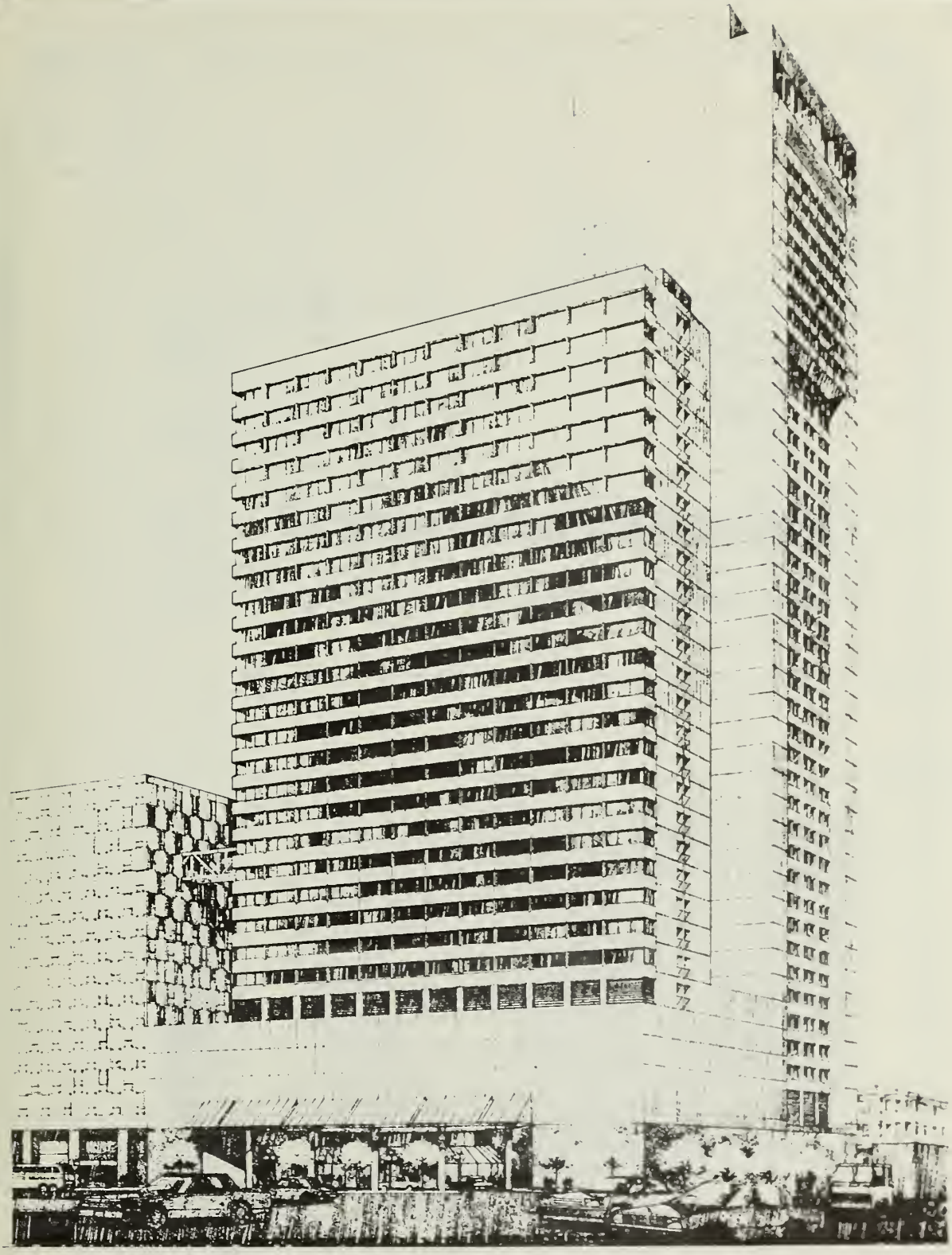
FIGURE 2: SITE PLAN OF HILTON HOTEL BLOCK

PROPOSED TOWER NO. 2

The 27-story project would consist of a 65 ft.-high, three-story base building covering the site, and a 320 ft.-high tower (see Figure 3). The tower would extend to the property lines on O'Farrell and Taylor Sts. and would be set back atop the base building about 20 ft. on the east from the original Hilton Hotel and about 40 ft. on the south from the existing Hilton Tower (see Figure 4, p. 12). The facade of the base building would be masonry to continue the existing masonry base treatment completely around the block. The facade of the proposed tower would be clad with light-colored aluminum panels to match the finish and material used on the original Hilton Hotel and Tower. Street trees would be installed on Taylor and O'Farrell Sts. adjacent to the site.

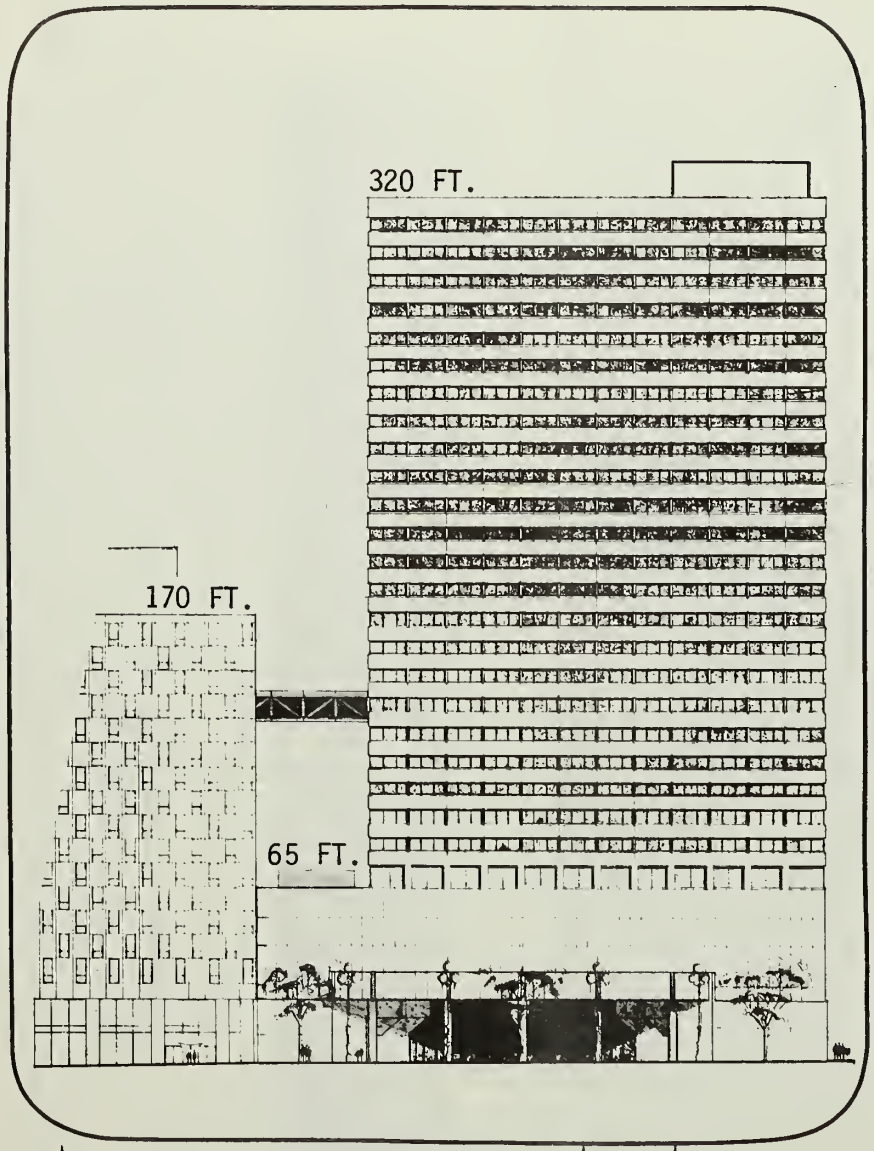
The first floor of the proposed Tower No. 2 would contain a porte cochere (entrance driveway and unloading area) with access from O'Farrell St. (see Figure 5, p. 13). The 36 ft.-high porte cochere entrance would provide a protected area for the unloading of passenger vehicles and the handling of luggage. Hotel guests would pass directly from the porte cochere to the proposed Grand Lobby and front-desk reception area, which would serve as the main lobby for the entire hotel. The proposed Grand Lobby would contain the front desk; the ground floor would also contain offices, a newsstand, the bell station and a luggage-handling area. The existing 360-seat Gazebo Coffee Shop would be expanded by about 160 seats on the eastern side of the proposed Grand Lobby.

On the second floor, an 11,800 sq. ft. multi-purpose room for convention uses would be adjacent to and connected with the existing Imperial Ballroom and Continental Ballroom (see Figure 6 p. 14). The second floor would contain a connection to the new food service kitchen to be developed in the existing California Room in the original Hilton Hotel. The third floor would contain a 14,100 sq. ft., column-free ballroom and a 5,000 sq. ft. assembly area (see Figure 7, p. 15). Landscaped tennis courts would be provided on the roof of the ballroom level to the south of the proposed tower (see Figure 8, p. 16).

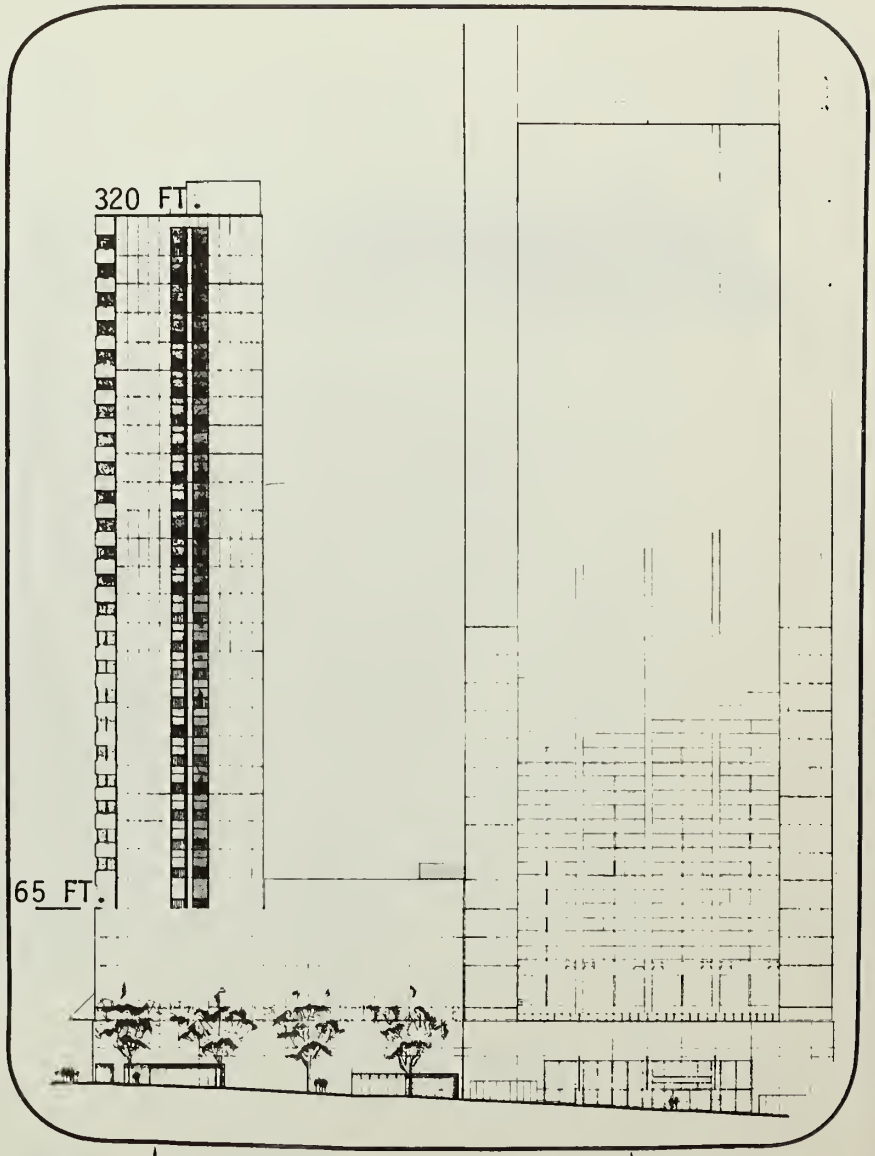


0 50'

FIGURE 3: ARTIST'S RENDERING OF THE PROPOSED PROJECT VIEWED FROM TAYLOR AND O'FARRELL STREETS



NORTH ELEVATION



WEST ELEVATION

FIGURE 4: NORTH AND WEST ELEVATIONS OF THE PROPOSED PROJECT

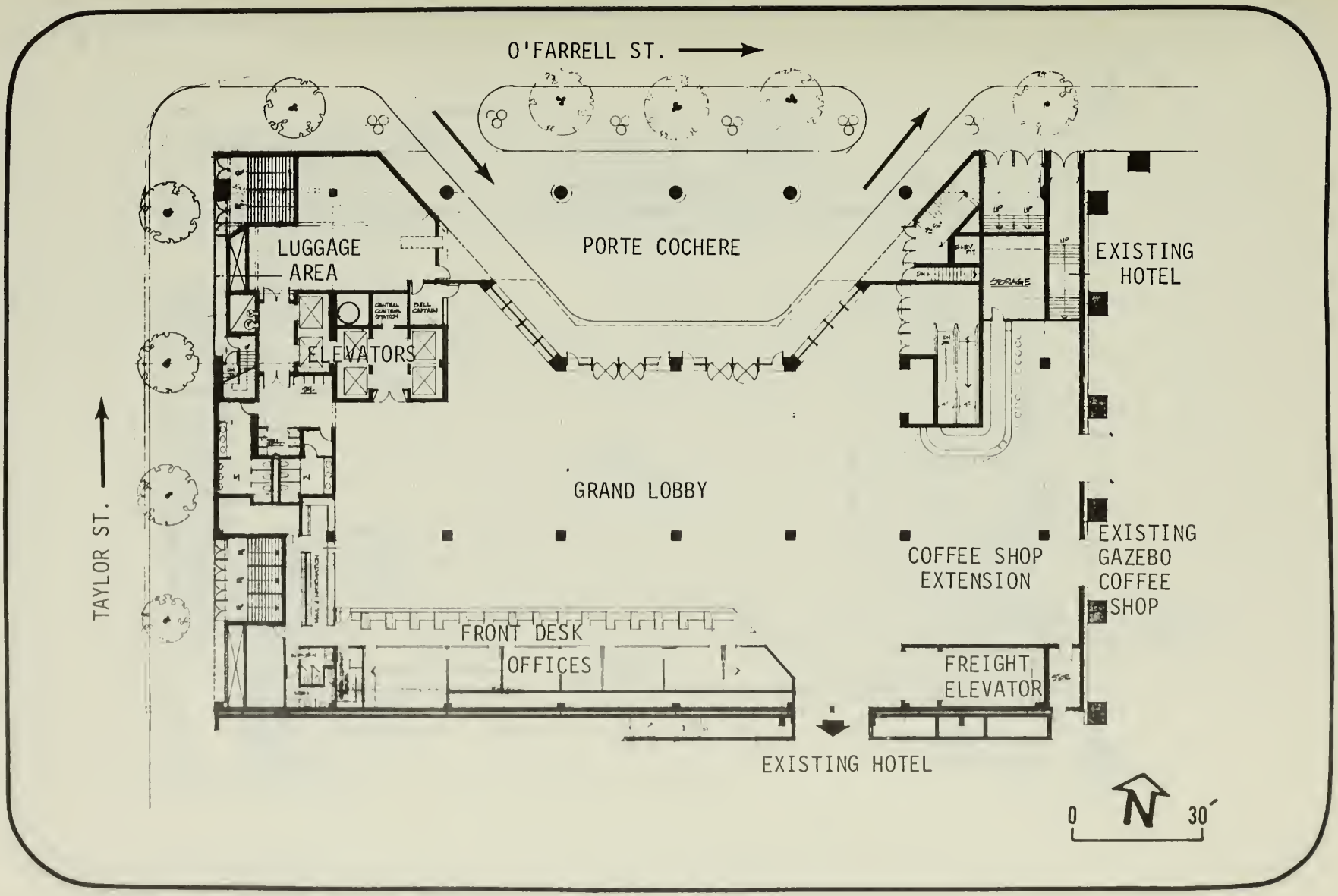


FIGURE 5: PROJECT GROUND-FLOOR PLAN

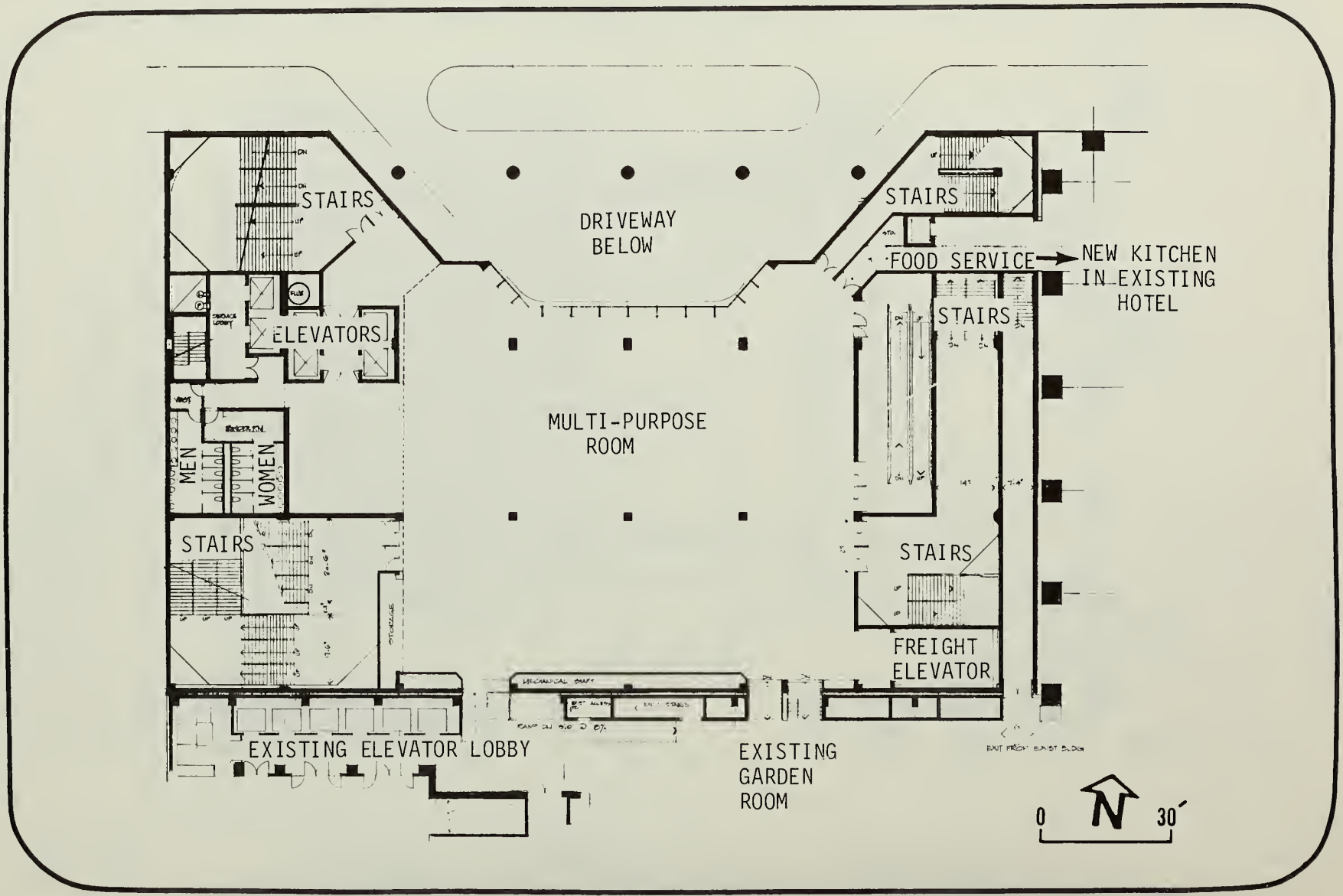


FIGURE 6: SECOND-FLOOR PLAN

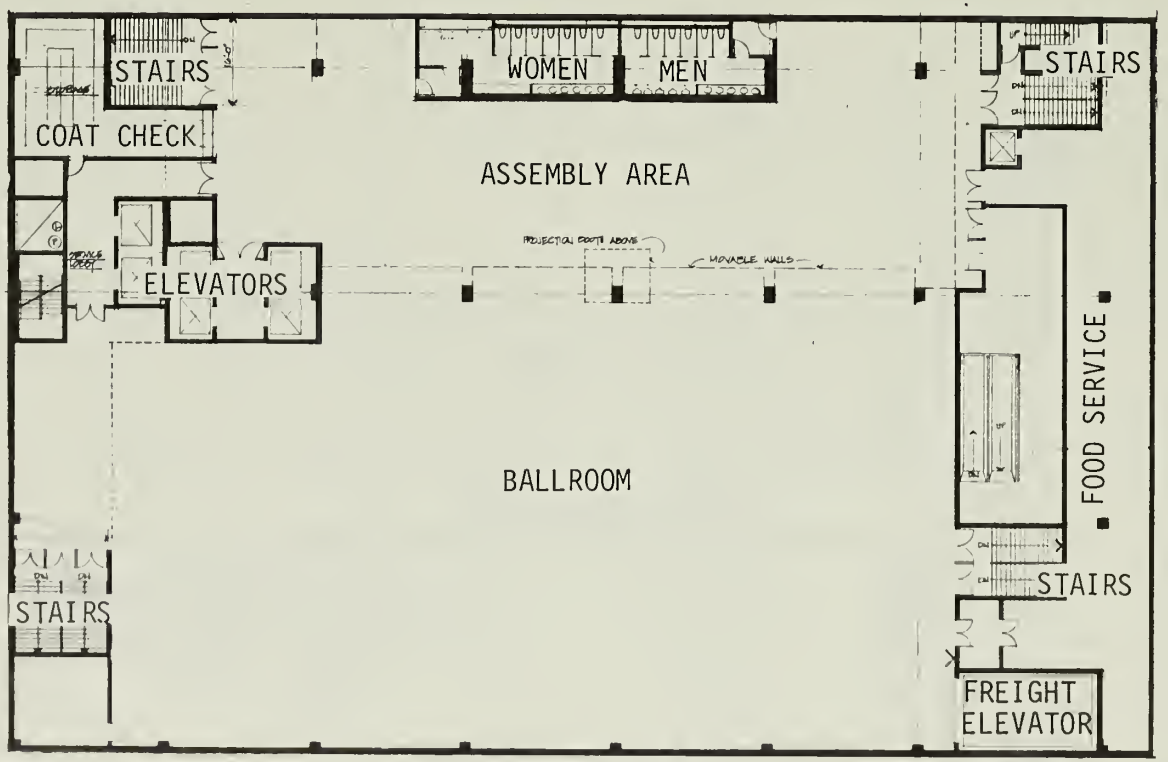


FIGURE 7: THIRD-FLOOR PLAN

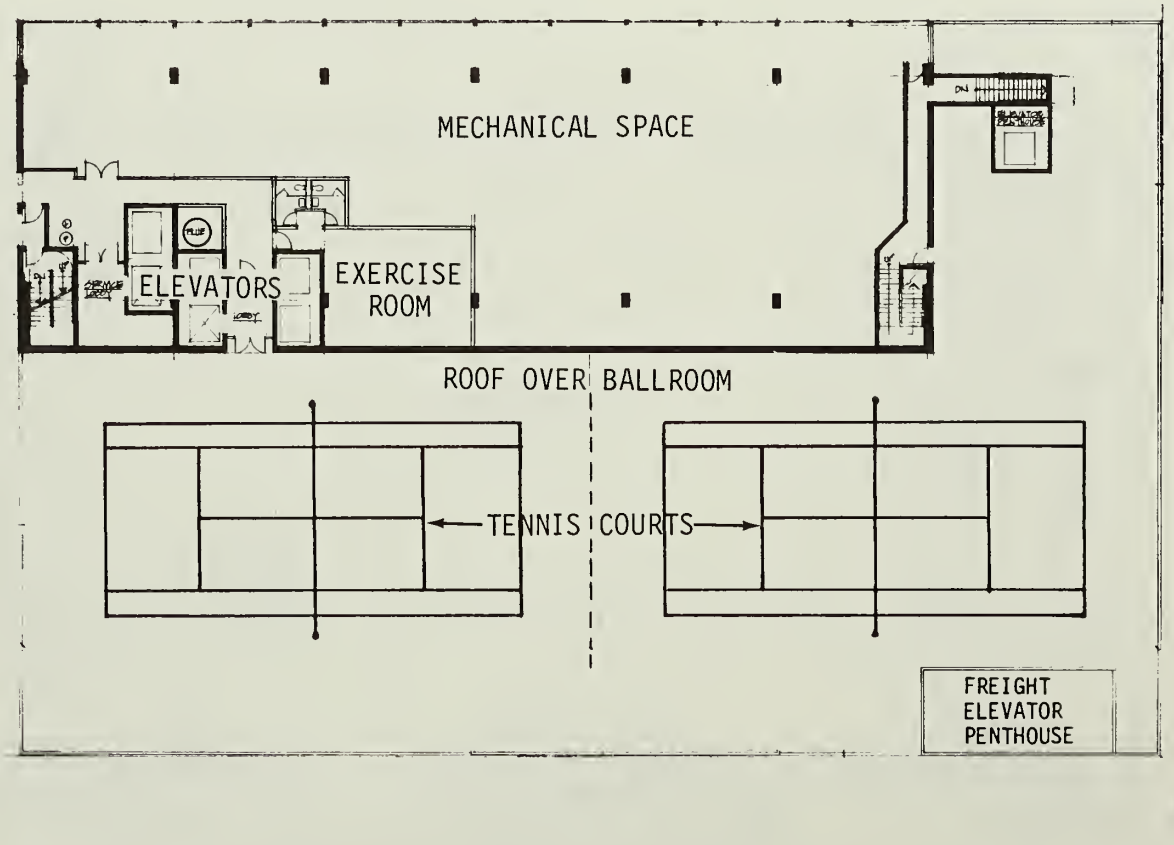


FIGURE 8: FOURTH-FLOOR PLAN

The proposed tower would begin at the fourth floor, which would contain mechanical equipment and an exercise room (see Figure 8, p. 16). Floors 5 through 27 would contain a total of about 410 keyed guest rooms, with about 10,540 gross sq. ft. per floor (see Figure 9). On the 10th floor, a skybridge for use by guests and food service personnel would connect the proposed tower with the original hotel building.

The gross floor area of the proposed Tower No. 2 addition, excluding the mechanical floor and structural basement (see Figure 10, p. 19), would be about 318,860 sq. ft. The total gross floor area would be about 361,860 sq. ft. (see Table 1 for a summary of floor areas).

TABLE 1: SAN FRANCISCO HILTON TOWER NO. 2 FLOOR-AREA SUMMARY

	Gross Floor Area
Lobby Floor (1st)	23,150
Multi-purpose Floor (2nd)	23,870
Ballroom Floor (3rd)	29,080
Guest Room Floors (5th - 27th at 10,540 sq. ft./floor)	242,420
Sky Bridge	340
HOTEL FLOOR AREA*	318,860 *
Basement Floor	29,080
Mechanical Equipment Floor (4th)	10,800
Mechanical Penthouse	1,430
Freight Elevator Penthouse	590
Exit Corridor	1,100
MECHANICAL AND STORAGE FLOOR AREA	43,000
TOTAL GROSS FLOOR AREA	361,860

* Gross floor area as defined by Section 102.8(a) of the City Planning Code.

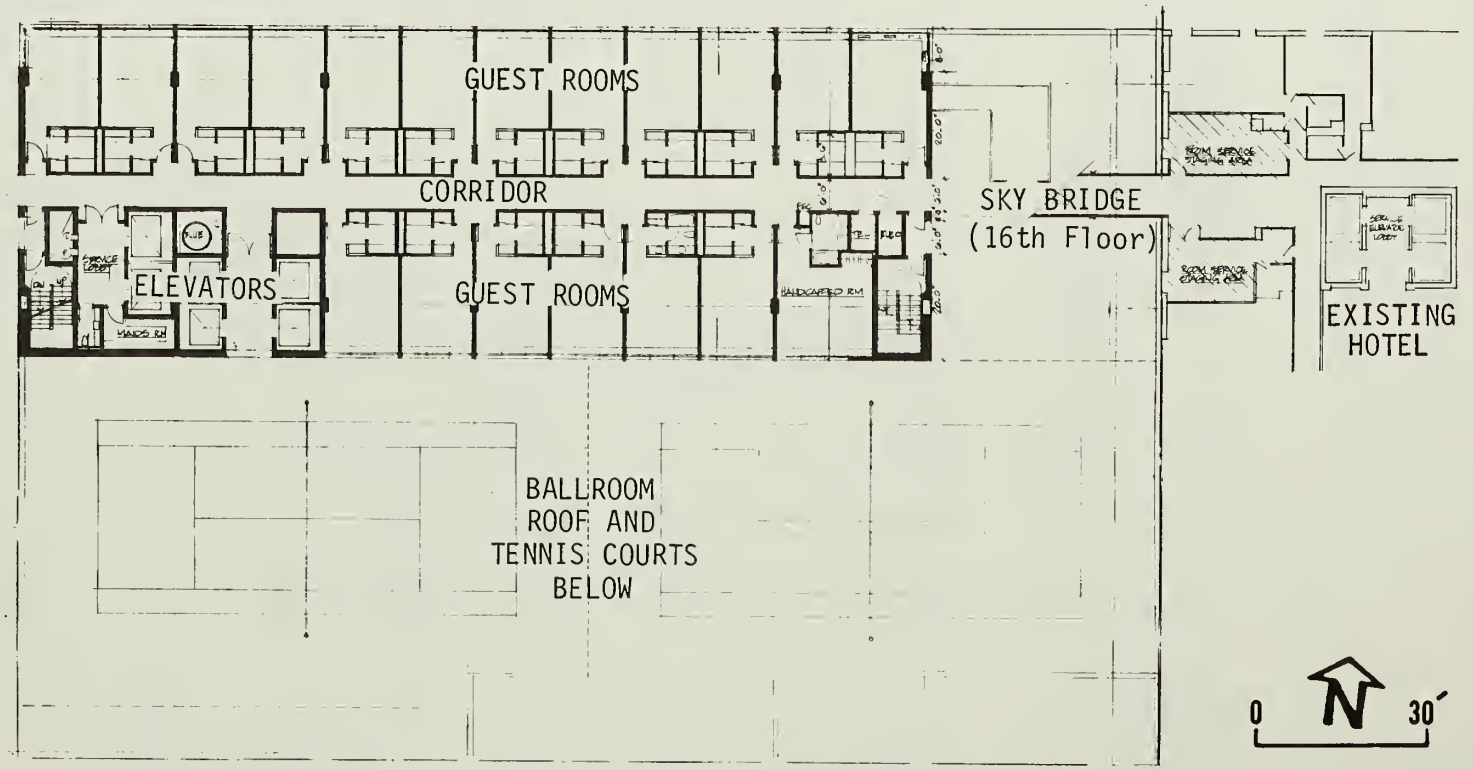


FIGURE 9: TYPICAL GUEST-ROOM FLOOR PLAN

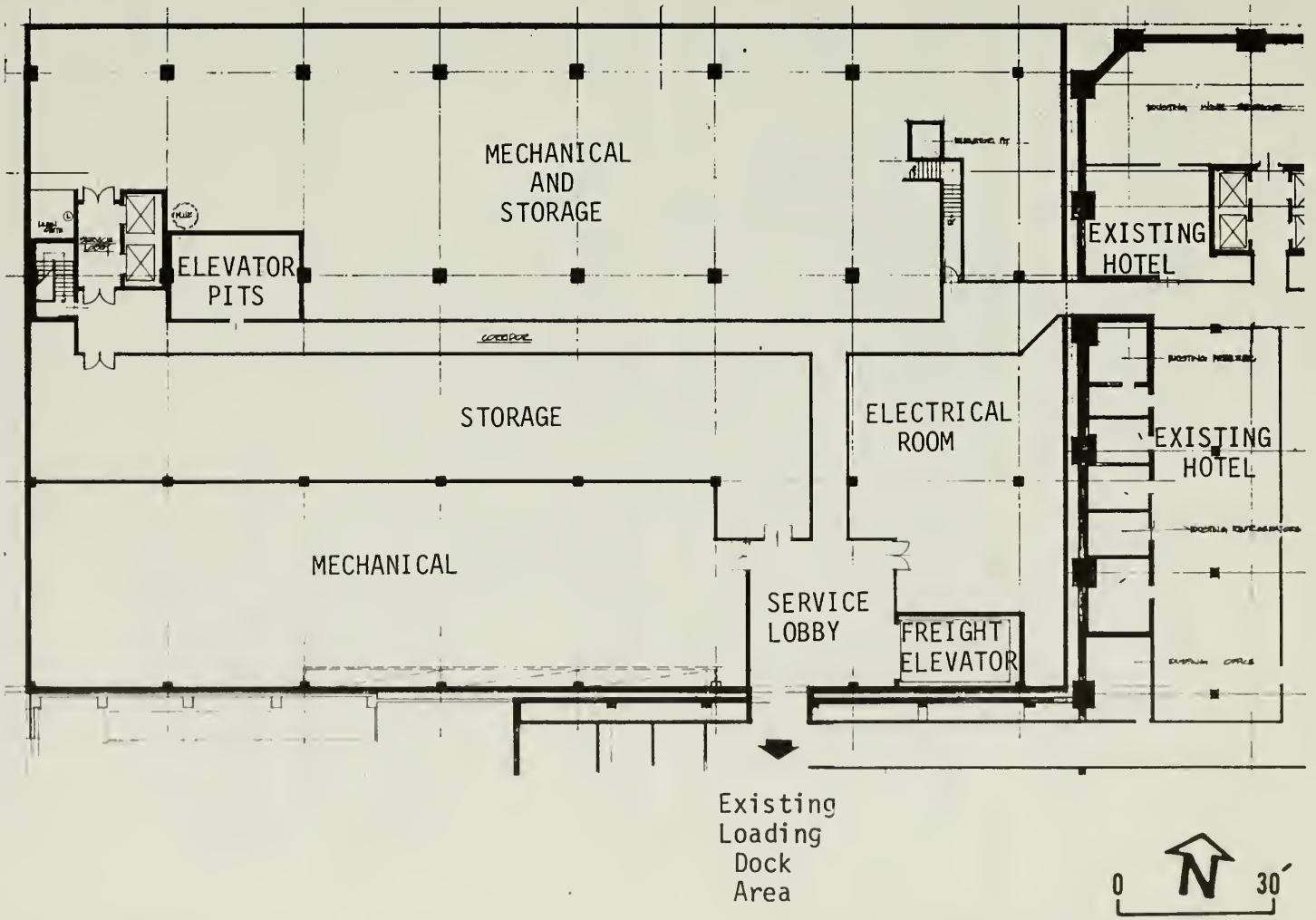


FIGURE 10: PROJECT BASEMENT PLAN

As part of the proposed project, the truck-loading area in the basement of the existing hotel would be reorganized, and one additional truck dock, accessible from Ellis St., would be added to the two existing docks. Direct access would be provided to a new service lobby and freight elevator to serve the hotel complex (see Figure 11).

D PROJECT SCHEDULE, REQUIRED ACTIONS AND COSTS

Public comment on the Draft Environmental Impact Report (EIR) and proposed project may be made in writing during the Draft EIR public review period or in person during the City Planning Commission hearings on the EIR and Conditional Use authorization. Detailed design of the Hilton Tower No. 2 and certification of the EIR are anticipated for the second half of 1980. Excavation and construction of the project (see Table 2) would begin in late 1980, after approval of the Conditional Use authorization for the project by the City Planning Commission and issuance of site, foundation and other permits, and would continue for about 24 months. First occupancy is scheduled for 1982. The cost of the building is estimated to be about $30 million in 1980 dollars.

TABLE 2: SCHEDULE OF CONSTRUCTION FOR THE HILTON TOWER NO. 2

Building Activity	Month in Which Completed*
Excavation and Foundation	5
Steel Erection	6
Exterior Finishing	12
Interior Finishing	24**
Initial Occupancy	24

*The building activities would continue concurrently. The month of the 24-month construction schedule in which the activity would be expected to be completed is given in the Table.
**Interior finishing would begin about 12 months after the commencement of excavation.

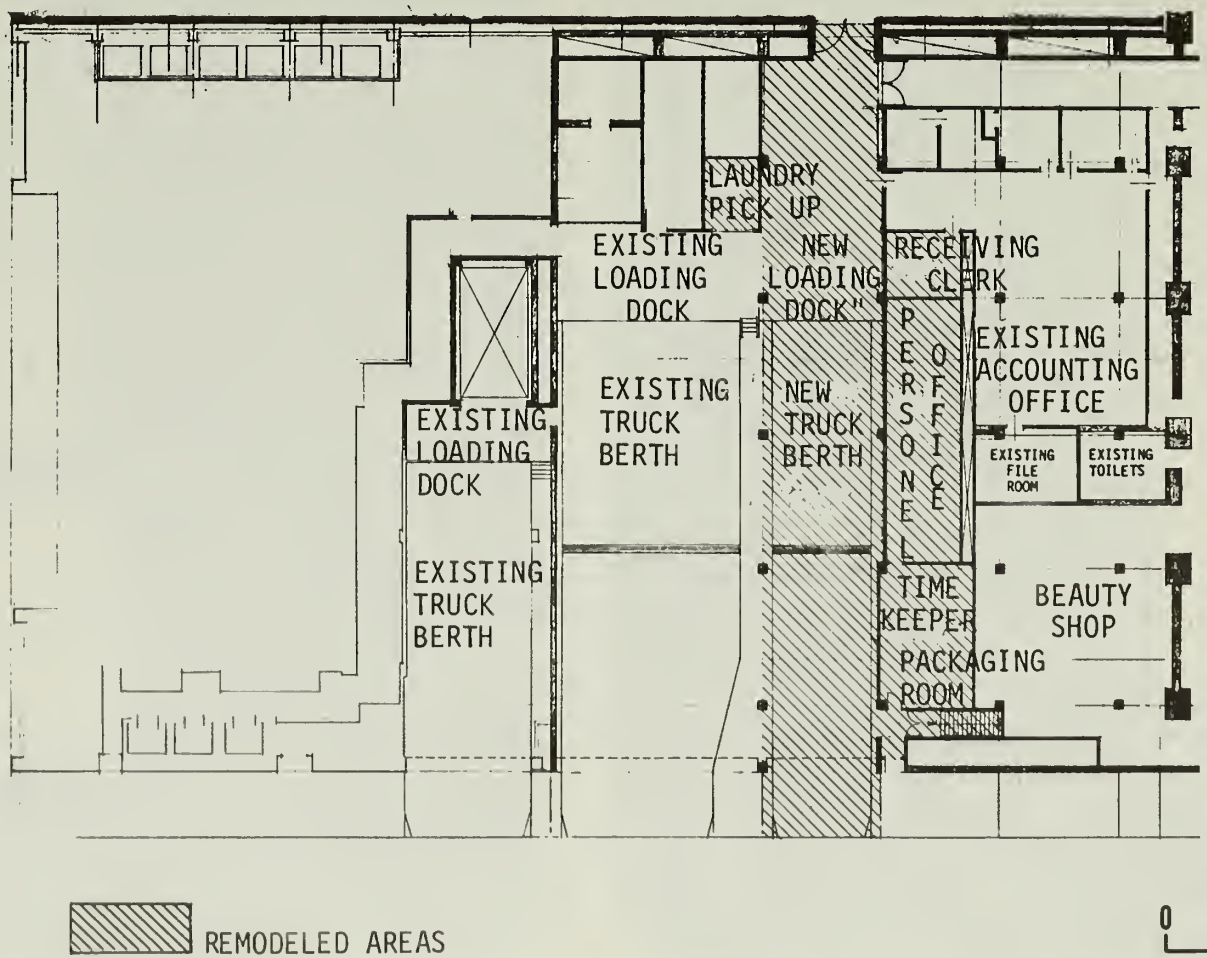


FIGURE 11: EXTENSION PLAN
FOR EXISTING BASEMENT

III. ENVIRONMENTAL SETTING

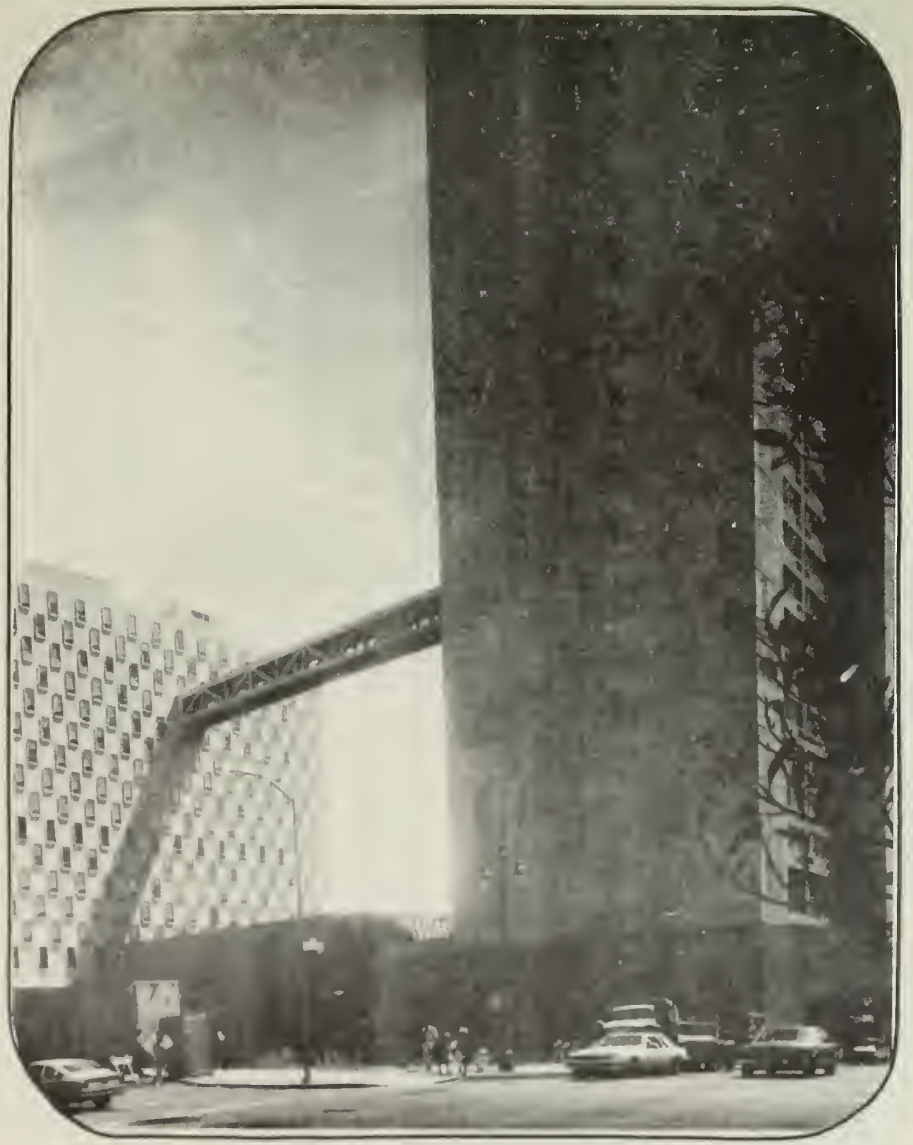
A. LAND USE AND ZONING

LAND USE

The project site is a vacant lot located in the northwest corner of Assessor's Block 325 on Lot 27. The site was formerly occupied by the downtown Airlines Bus Terminal, which was demolished in 1979. The southern and eastern property lines of the site adjoin the existing San Francisco Hilton Hotel, including the 19-story original hotel and the 40-story Tower (see Figure 12). The project site abuts O'Farrell St. on the north and Taylor St. on the west.

Assessor's Block 316 is located across O'Farrell St. to the north of the site (see Figure 13, p. 24). The south side of the block, facing the project site, contains the four-story Bohemian Garage No. 3, the KBHK-TV (Channel 44) studio and the nine-story Downtown Center Garage, which contains street-level retail shops and car-rental offices. The remainder of the block contains the 14 story Clift Hotel, the Curran Theatre, the Geary Theatre, a six-story building with personal services operations but mostly vacant upper floors, and a two-story structure with retail and personal services.

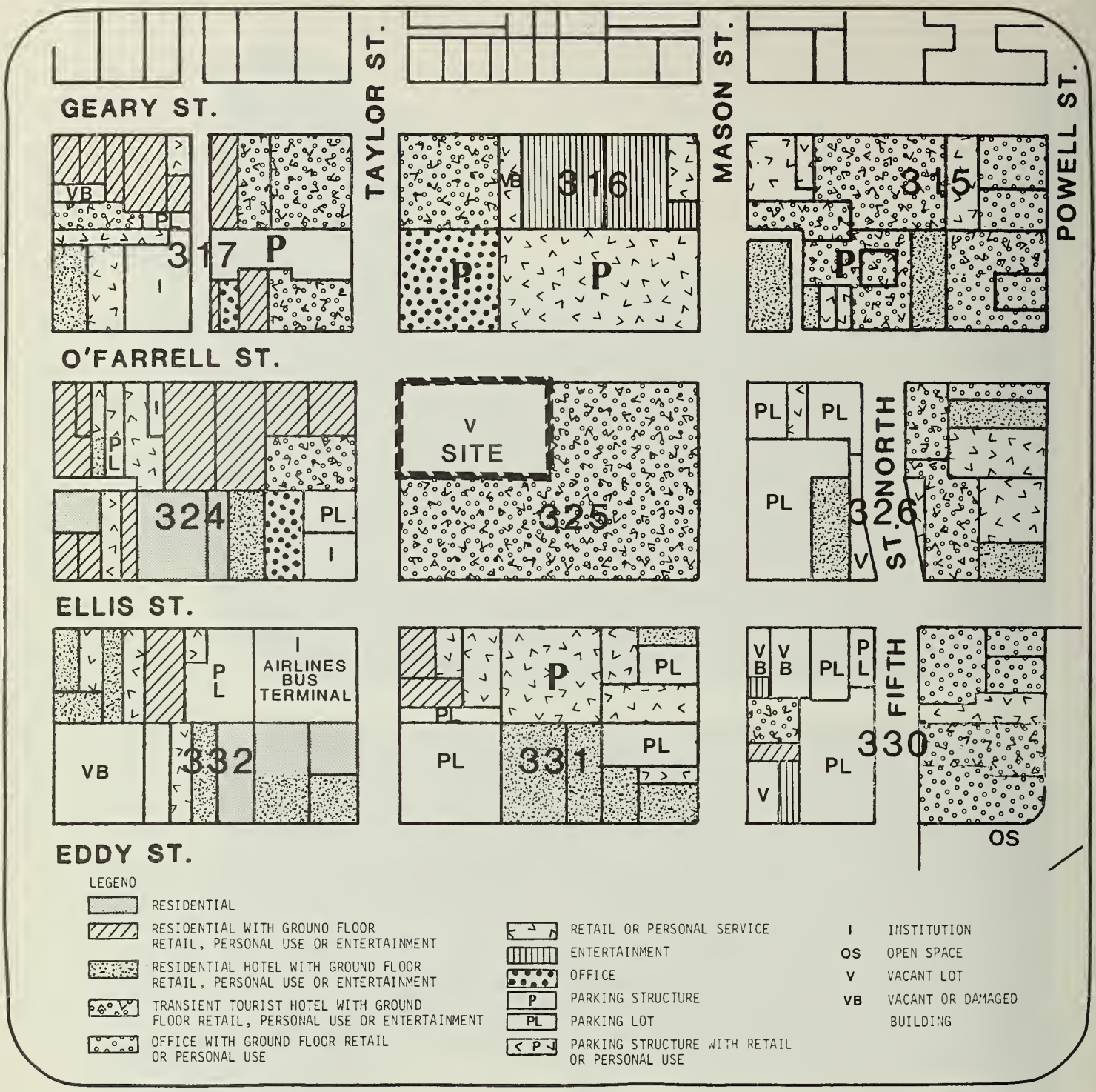
Assessor's Block 317 is located to the northwest of the project site. The block is bisected by Shannon St. The southeast corner of the block, diagonally facing the project site, is occupied by the 16-story Californian Hotel, with restaurants, personal-services and car-rental operations at street level. A two-story parking garage with a car-rental operation occupies the center of the block. The remainder of the block east of Shannon St. contains the six-story Insert Hotel Bellevue, with restaurants and car-rental agencies; a ten story apartment building with retail and personal services operations at street level; five- to six-story apartment buildings with street level shops, car-rental agencies and encounter studios; and an office building with downtown support services at street level. A one-story building on



A. VIEW FROM THE NORTHWEST CORNER OF O'FARRELL AND TAYLOR STREETS. (ORIGINAL HILTON HOTEL TO THE LEFT; HILTON TOWER TO THE RIGHT; SITE IN FOREGROUND.)

B. VIEW FROM NORTH SIDE OF O'FARRELL NEAR MASON ST. (ORIGINAL HILTON TO THE LEFT; SITE AT CENTER.)

FIGURE 12: VIEWS OF THE EXISTING SITE



SOURCE: Environmental Science Associates, Inc.

FIGURE 13: LAND USE IN THE VICINITY OF THE PROJECT SITE

O'Farrell St. is vacant. The portion of Assessor's Block 317 west of Shannon Street contains one- to seven-story buildings consisting largely of apartments and residential hotels with street level retail stores and personal services offices. Other uses include the Fifth Church of Christ Scientist, a private parking lot, cocktail lounges, a laundry and a vacant building.

Assessor's Block 324 is located directly west of the project site across Taylor St. Facing the project site are a six-story residential hotel with street-level retail stores, car rental operations, laundry and encounter studio; a one-story coffee shop; the eight-story Mark Twain visitor hotel with restaurant and cocktail lounge; a one-story car-rental agency; a parking lot and the Glide Memorial Methodist Church. The remainder of the block consists of one- to 13-story buildings containing apartments and residential hotels with a variety of stores and offices at street level, including such uses as retail stores and personal services offices, encounter studios, cocktail lounges, entertainment facilities, restaurants and one institutional use, the Downtown Senior Center. A small private parking lot is located on Steveloe Place.

Assessor's Block 332 is located to the southwest of the project site, diagonally across the intersection of Taylor and Ellis Sts. The northeast corner of the block facing the Hilton Hotel Tower is occupied by the new downtown airlines bus terminal, currently under construction. A parking lot is located to the west of the terminal. The block contains primarily one- to 12-story apartment buildings and residential hotels, generally with retail stores, cocktail lounges and restaurants at street level. Other uses on the block include a laundry, parking lot and the vacant Downtown Bowling Alley.

Assessor's Block 331 is located south of the Hilton Hotel, across Ellis St. The block is occupied by one- to six-story buildings containing residential hotels and apartments, with street level retail and personal services establishments, entertainment facilities and restaurants. A large parking structure and several parking lots are located on the block.

Assessor's Block 330 is located southeast of the Hilton Hotel, diagonally across the intersection of Mason and Ellis Sts. The block is divided by

Fifth St. North. West of Fifth St. North, the block is largely parking lots and vacant land. The western portion of the block facing on Ellis St. contains burned-out retail stores, and restaurant and entertainment facilities. The seven-story Olympic Hotel with street-level retail stores and personal services offices, and an adjoining apartment building, occupy the remainder of the block. The portion of the block east of Fifth St. North is occupied by two- to six-story buildings including visitor hotels with street-level retail stores, restaurants, personal services offices and a bank. The southern portion of the block is joined by a pedestrian mall to Andrew S. Hallidie Plaza (on Assessor's Block 341). An office of the San Francisco Convention and Visitors Bureau is located at the plaza, which contains stations for the Muni Metro and BART subways.

Assessor's Block 326 is located east of the Hilton Hotel, across Mason St. A parking lot occupies the west side of the block, facing the hotel across Mason St. The block is divided by Fifth St. North. On the west side of Fifth St. North, parking lots and vacant space occupy most of the block. A three-story retail store, a one-story car rental agency and a seven-story residential hotel for the elderly with a retail store at street level occupy the remainder of the block. East of Fifth St. North, one- to seven-story buildings are occupied by visitor and residential hotels with street-level shops, restaurants, personal services establishments and cocktail lounges.

Assessor's Block 315 is located to the northeast of the Hilton Hotel diagonally across the intersection of Mason and O'Farrell Sts. The six-story Virginia Hotel occupies the southwest corner of the block across from the Hilton Hotel. The street level of the Virginia Hotel contains retail shops and restaurants. The block is occupied by one- to nine-story buildings consisting largely of visitor and residential hotels with street level shops and offices retail and personal services establishments, cocktail lounges and restaurants. A bank, an office building and a public parking structure (combined with the Handlery Motor Inn) are also located on the block. Union Square is located to the northeast of Block 315.

Tenderloin Community Characteristics. The project site is in a transition zone between two areas of different character; this portion of the Tenderloin

is located between the downtown hotel, retail and commercial area to the north and east, and the Tenderloin residential area to the west and south. The downtown commercial area has numerous retail establishments, personal services offices and businesses oriented primarily to tourists and middle- and upper-income residents of the City and Bay Area. The Theater District is located along Geary St. one block north of the hotel. Many tourist-oriented businesses are located in the area along Powell St. Many visitor hotels are located in that area and to the north of the site. By contrast, the Tenderloin area to the west and south of the site has retail stores, personal services establishments, residential hotels primarily occupied by low-income (including many elderly) residents, cocktail lounges, restaurants and adult entertainment facilities With the exception of some entertainment facilities, hotels and restaurants, many businesses are oriented to the neighborhood residents and to low-income patrons.

The Tenderloin contains approximately 20,000 residents; nearly one-third are transients. Located in San Francisco's most densely built neighborhood, about 60% of the residential buildings contain 50 or more units. The area is characterized primarily by immigrants, the elderly, low-income families, and transients./1/ In 1976, nearly one-quarter of the residents received an average monthly income of less than $250./2/ At least 60% of the households were on fixed incomes or public assistance. About 86% of the households consist of single persons; about 38% of the residents are over 60 years old /3/

Census data show that, in 1970, more than 80% of the Tenderloin residents were White. Rising rents and demolition of housing units in the Western Addition and Chinatown have caused a steady influx of Blacks and Chinese-Americans. In addition, relocation agencies are locating around 200 incoming Indochinese refugees monthly in the Tenderloin./1/

Most Tenderloin housing is in multiple-unit apartment buildings and residential hotels. Of the approximately 14,000 units, about 57%, or 8,000 units consisted of hotel rooms. Currently, 16% of the residential hotel units in the area are vacant due to poor condition or because the owners do not choose to rent them About 58% of the occupied housing units were found

to be substandard in 1976. About 86% of the Tenderloin housing units are renter occupied, with rents for one-bedroom units ranging from $130 to $170./3/

ZONING

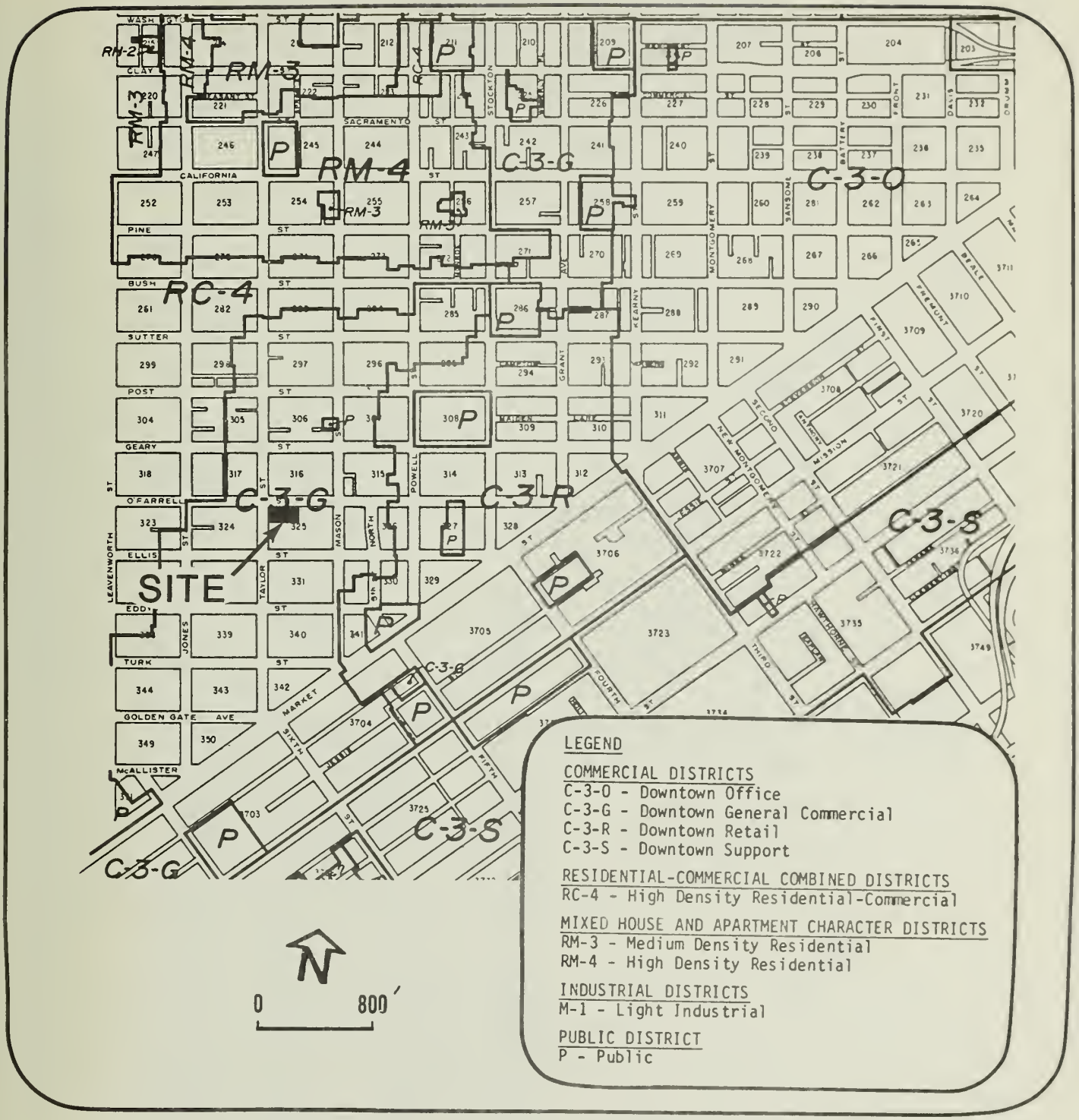
The City Planning Code zoning classification for the project site is C-3-G, Downtown General Commercial (see Figure 14). A variety of uses are permitted in the C-3-G District, including retail, offices, hotels, entertainment, clubs and institutions, and high-density residential. The basic permitted Floor Area Ratio in the C-3-G District is 10 to 1, i.e., buildings may have a floor area of up to ten times the area of the site. Under a bonus system established by Section 126 of Planning Code, additional space is permitted as specified for design features that improve access to the building and offer amenities such as parking access, multiple building entrances, side setbacks and observation decks. On 27 May 1980 the Board of Supervisors established a moratorium on the use of this section of the City Planning Code; the proposed project was exempted from this moratorium by an authorization for hotels to file for a conditional use

No off-street parking is required for individual commercial buildings. Although Section 151 of the City Planning Code requires off-street parking for hotels, exemption is given to the C 3 districts because of traffic congestion and the availability of public transportation. Section 152 of the City Planning Code requires off-street loading docks at the rate of three spaces for the first 500,000 gross sq.ft. of hotel space, plus one space for each additional 400,000 sq.ft.

The site is located in the 320-I Height and Bulk District (see Figure 15, p. 30), in which the maximum permitted height is 320 feet. Above a height of 150 ft , the maximum permitted building length is 170 ft. and the maximum permitted diagonal dimension is 200 ft.

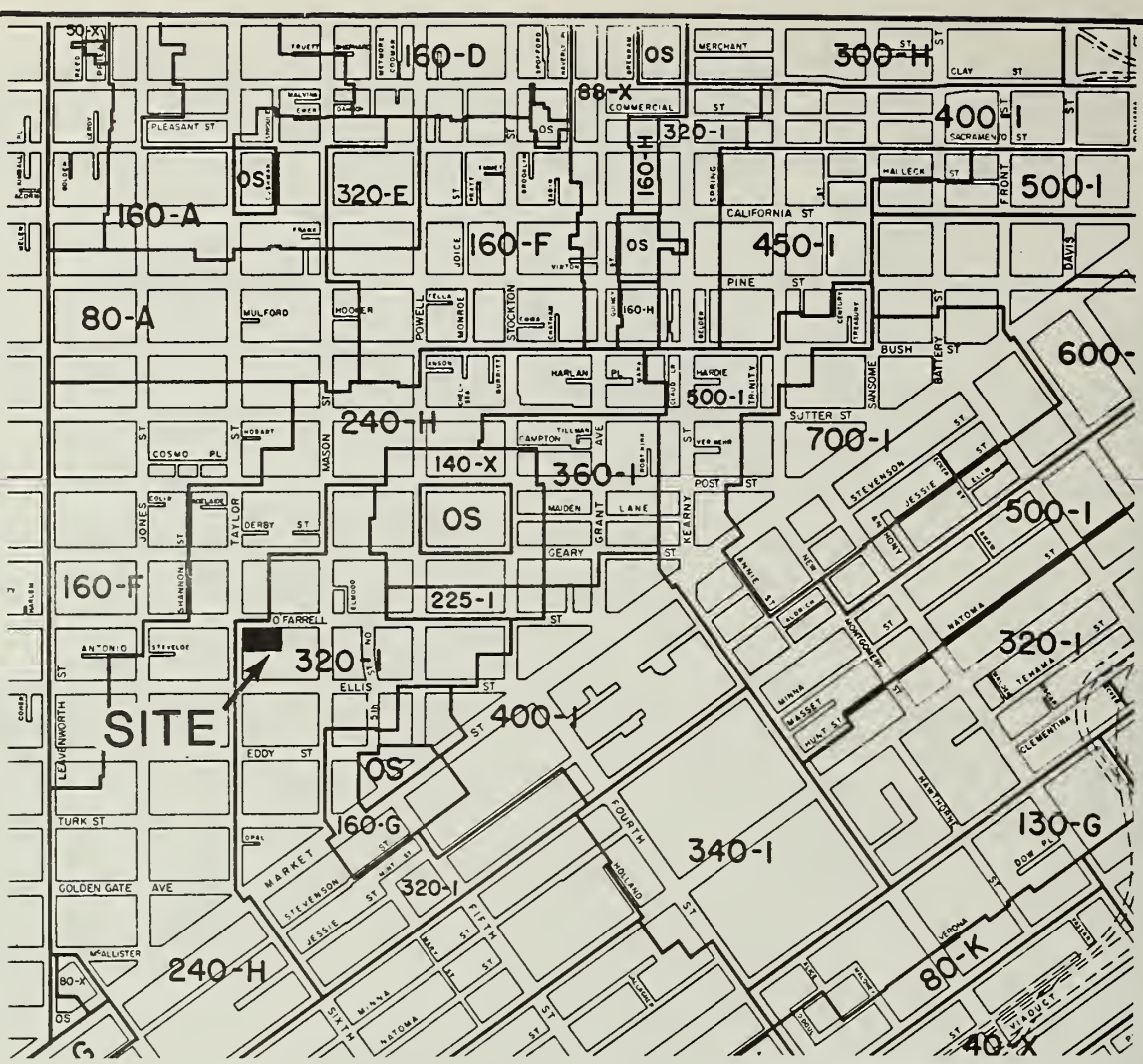
NOTES - Land Use and Zoning

/1/ San Francisco Study Center, February 1980, "Research Paper on San Francisco's Tenderloin Neighborhood", prepared for the North of Market Planning Coalition.



SOURCE: City and County of San Francisco, 1979, City Planning Code

FIGURE 14: PLANNING CODE USE DISTRICTS



HEIGHT and BULK DISTRICTS	HEIGHT LIMIT	HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY	MAXIMUM BUILDING LENGTH	MAXIMUM DIAGONAL DIMENSION
700-I	700	150'	170'	200'
600-I	600	150'	170'	200'
500-I	500	150'	170'	200'
450-I	450	150'	170'	200'
400-I	400	150'	170'	200'
340-I	340	150'	170'	200'
320-I	320	150'	170'	200'
320-E	320	65'	110'	200'
300-H	300	100'	170'	200'
240-H	240	100'	170'	140'
240-G	240	80'	170'	200'
225-I	225	150'	170'	200'
160-H	160	100'	170'	200'
160-G	160	80'	170'	200'
160-F	160	80'	110'	140'
160-D	160	40'	110'	140'
160-A	160	40'	110'	125'
150-X	150	BULK LIMITS NOT APPLICABLE		
140-X	140	BULK LIMITS NOT APPLICABLE		
130-G	130	80'	170'	200'
105-F	105	80'	110'	140'
88-X	88	BULK LIMITS NOT APPLICABLE		
80-K	80	60'	250'	300'
80-A	80	40'	110'	125'
65-A	65	40'	110'	125'
50-X	50	BULK LIMITS NOT APPLICABLE		
40-X	40	BULK LIMITS NOT APPLICABLE		
OS		CONFORMITY WITH OBJECTIVES, PRINCIPLES AND POLICIES OF THE MASTER PLAN.		

N

0 800'

SOURCE: City and County of San Francisco, 1979, City Planning Code

FIGURE 15: HEIGHT AND BULK DISTRICTS

/2/ Newmeyer, J., and G. Johnson, 1979, "The Tenderloin Drug Outreach Group."

/3/ Mayor's Office of Community Development, City and County of San Francisco, 31 July 1980 "North of Market Hotel Project Urban Development Action Grant Application," submitted to the U.S. Department of Housing and Urban Development.

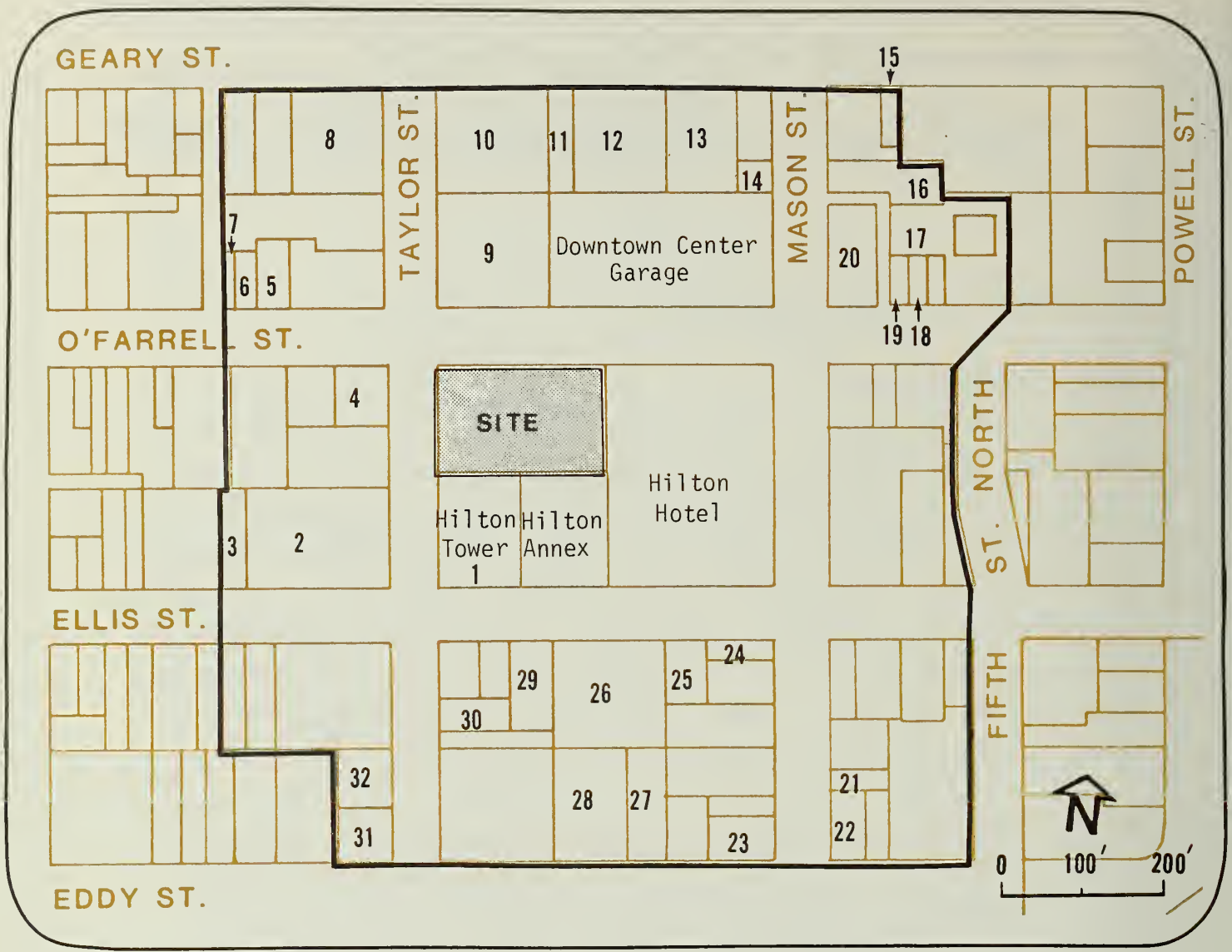
B URBAN DESIGN AND VISUAL ASPECTS

ARCHITECTURAL RESOURCES

The project site is vacant and contains no architectural resources. Of the Hilton structures which occupy the remainder of the project block, the existing tower immediately south of the project site has received recognition for architectural merit. It was given a summary rating of "2" (on a scale of "0" to "5") in an architectural survey prepared by the Department of City Planning in 1974-1976./1/ The tower was designed by John Carl Warnecke and Associates and completed in 1969. The City survey characterizes it as a variation of a modern root style (see Figure 12, p. 23).

The area immediately surrounding the project block contains a number of buildings that have received recognition in both the City's architectural survey and another more-recently-published survey by the Foundation for San Francisco's Architectural Heritage./1/ Each building in the immediate vicinity of the project block that is listed in either survey is shown in Figure 16, together with its survey ratings.

The most-highly-rated group of structures in the study area fronts on Geary St., one block north of the project site. This group includes the Hotel Bellevue, the Clift Hotel, 459 Geary St., the Curran Theater and the Geary Theater. Each of these structures received a rating of either "A" or "B" in the Heritage survey and each, except 459 Geary St., received a summary rating of "3" or more in the City survey. The most-highly-rated of these structures are the Curran and Geary Theaters, each of which received the highest ratings given in each survey. The Geary Theater is also listed on the National Register of Historic Places and is designated City Landmark No. 82.



LEGEND

	Building	S.F. DCP Inventory*	Heritage Survey*
1	Hilton Tower	2-F8-2	NL
2	Glide Memorial Church	1-D4-2	NL
3	344 Ellis	0-A6-0	NL
4	Columbia Hotel, 401-411 O'Farrell	1-B6-1	NL
5	428-430 O'Farrell	0-D7-0	NL
6	436 O'Farrell	0-D7-0	NL
7	442 O'Farrell	1-D7-1	NL
8	Hotel Bellevue 501 Geary**	3-D1-4	NL
9	KBHK-TV, 444 Taylor**	2-F6-3	NL
10	Clift Hotel, 491 Geary**	2-D3-3	B
11	459 Geary**	1-F1-1	B
12	Curran Theater, 445 Geary**	4-D1-5	A
13	Geary Theater, 415 Geary***+	4-D1-5	A
14	Geary Theater Annex, 333 Mason	NL	B
15	381 Geary	NL	C
16	334-336 Mason	1-D7-1	C

	Building	S.F. DCP Inventory*	Heritage Survey*
17	250-260 O'Farrell	NL	LNR
18	272 O'Farrell	NL	C
19	280 O'Farrell	NL	C
20	300-324 Mason	1-D7-2	C
21	124 Mason	1-DF-1	NL
22	110-112 Mason (Demolished)	0-D7-0	NL
23	Hotel Mason, 101-111 Mason	1-D3-2	NL
24	167 Mason	0-F1-1	NL
25	229-231 Ellis	1-D1-1	NL
26	233-261 Ellis	1-F1-1	NL
27	Hotel Empress, 136-144 Eddy	0-D7-0	NL
28	Hotel Wm. Penn, 156-166 Eddy	1-D3-1	NL
29	275 Ellis	2-F4-2	NL
30	240-248 Taylor	0-D7-0	NL
31	Hotel Ritz, 200-216 Eddy	0-D7-1	NL
32	225 Taylor	0-D7-0	NL

NOTES:
*See Appendix B for explanation of surveys and ratings.
**Structure of Merit (May 1980)
***Listed in National Register of Historic Places (February 1979)
+Designated City Landmark

NL: Not Listed
LNR: Listed but Not Rated
Study Area Boundary

SOURCE: Environmental Science Associates, Inc.

FIGURE 16: ARCHITECTURAL RESOURCES ON AND IN VICINITY OF PROJECT BLOCK

The only structure in the study area outside this Geary St. group to receive a summary rating as high as "3" in the Department of City Planning survey is the KBHK-TV (Channel 44) headquarters building immediately across O'Farrell St. from the project site (see Figure 17). The remaining buildings in the study area received ratings lower than "3" in the surveys, or were unrated.

URBAN DESIGN AND VISUAL FACTORS

The 0.6-acre project site is currently an open, vacant parcel at the southeast corner of O'Farrell and Taylor Sts. (see Figure 12, p. 23). It is enclosed by the existing 19-story Hilton Hotel on the east, by the 40-story Hilton Tower and low-rise Plaza Annex addition on the south, and by a chain-link fence on the west and north along its Taylor and O'Farrell St. frontages.

The existing Hilton Hotel occupies most of the eastern half of the project block. From surrounding streets it appears as a box-like structure about 170 ft. high. It has frontages of about 200 ft. on Ellis and O'Farrell Sts. and a frontage of about 275 ft. on Mason St. The upper floors of the structure are clad with light-tan-colored masonry and have a checkerboard fenestration pattern. At street level, the structure is supported by columns clad in dark-tan-colored masonry. This surface material is carried around the base of the hotel across the south facade of the low-rise plaza addition, fronting on Ellis St., and around the base of the high-rise tower (see Figure 12, p. 23). The building is inward-turning at the street level so that pedestrians experience expanses of blank walls when passing the eastern and southern facades.

The existing Hilton Tower is approximately 480 ft. high. It has frontages of about 70 ft. on Ellis St. and 135 ft. on Taylor St. The east and west facades of its upper floors are clad with light, silver-colored, aluminum paneling and a rectilinear glazing pattern. Its north facade, which faces the project site, is a uniform, unrelieved surface of aluminum panels.

Most neighboring structures directly opposite the project block and in its general vicinity are older and smaller in scale than the existing Hilton buildings on the project block (see Figure 17 and III.A., p. 22).

A: BUILDINGS ON ELLIS ST. FRONTING THE PROJECT BLOCK (SEEN FROM MASON ST.)

C: BUILDINGS ON O'FARRELL ST. FRONTING THE PROJECT BLOCK (SEEN FROM TAYLOR ST.)

B: BUILDINGS ON TAYLOR ST. FRONTING THE PROJECT BLOCK (SEEN FROM O'FARRELL ST.)

NOTE: Refer to Figure 16 for the addresses of the rated buildings shown.

SOURCE: Environmental Science Associates, Inc.

FIGURE 17: VIEWS OF BUILDINGS FRONTING THE PROJECT BLOCK

Street-level pedestrian amenities on the project block are limited to decorative street lights along Taylor St. and a few small, unevenly spaced street trees and coin-operated newsracks around the remainder of the block.

Visibility of the vacant project site is now limited to adjacent segments of neighboring streets, and buildings fronting on those street segments. The adjacent 480 ft. Hilton Tower, however, is visually prominent in many local and long range views toward the project block.

NOTES - Urban Design and Visual Aspects

/1/ See Appendix B, p. 191, for a discussion of the City's architectural survey and rating system and the Heritage Architectural survey and rating system.

C. CULTURAL AND HISTORIC ASPECTS

San Francisco was first intensively mapped by the U.S. Coast Survey in 1852 after it became a part of the United States. At that time, the project site was west of the developed city and still in its natural state, covered by dune sand. The site was fully developed by 1868 with one- to six-story buildings/1/ and was rebuilt in a similar manner after the earthquake and fire of 1906. The site was later occupied by a 70 ft.-high, 50-room hotel on the corner of O'Farrell and Mason Sts.; three garages which were one-story, two-stories and six-stories high; and a 40-room hotel which was 55 ft. high. In 1950, after studies by the Department of City Planning and urgent pressure from the Board of Supervisors, the airlines collectively developed the Downtown Airlines Bus Terminal on the site. In 1979 the terminal building was razed, and its basement area, containing a restaurant-coffee shop, luggage storage lockers and restrooms, filled with unconsolidated fill material up to street level. The parcel was enclosed by a cyclone fence.

NOTE - Cultural and Historic Aspects

/1/ Map: Bird's Eye View of the City and County of San Francisco, 1968, W.D Vallance Gray and C.B. Gifford, San Francisco.

D. COMMUNITY SERVICES AND UTILITIES

Police. The project site is within the jurisdiction of the San Francisco Police Department's Central District Station at 766 Vallejo St. The site located in Statistical Reporting Area (RA) 360, bounded by Geary, Mason, Eddy and Leavenworth Sts. The area is patrolled by a 24-hour radio car. Foot patrols are assigned when officers are available./1/ In 1979, RA 360 had the second-highest reported number of incidents of criminal activity in San Francisco. The total number of reported incidents in 1979 was 3,071; approximately 15% were violent crimes./2/ Current security measures at the existing San Francisco Hilton Hotel and Tower include patrolling security guards, stationary watchmen, and camera monitors at loading docks, entrances and other selected points. A central security office with viewing stations is located in the basement of the existing hotel./3/

Fire. The San Francisco Fire Department provides fire protection services to San Francisco. Engine 1 and Truck 1 from the station at 416 Jessie Street, about one-half mile from the site, would be the units of first response. Response time to the area is about two minutes. Hydrants are located on two corners of O'Farrell and Taylor Sts. and also at all corners of the existing Hilton Hotel. A fire alarm box is located at Mason and Ellis Sts./4/ The existing Hilton Hotel and Tower is currently constructing and installing all fire safety equipment required under Title 19 of the California Administrative Code./5/

Water. San Francisco receives water from the Hetch Hetchy system. The project area is served by the University Mound Reservoir, with a capacity of 140 million gallons. Current water use in San Francisco averages about 89 million gallons per day (MGD). The site is served by an eight-inch diameter main in O'Farrell St. and six- and 12-inch diameter mains in Taylor St. There is no water use on the site at present. Current water use at the existing Hilton Hotel and Tower is about 259,000 gallons per day (gpd)./6/

Wastewater. The Bureau of Sanitary Engineering of the San Francisco Public Works Department provides combined storm- and sanitary-sewer service to the

project area. Service to the site would be available from the 3 ft. by 5 ft. rectangular brick mains in Taylor and Ellis Sts./7/

The North Point Pollution Control Plant, which receives stormwater and sewage flows from the area, receives average daily dry-weather flows of 52 MGD./8/ City treatment plants are not designed to handle storm flow from rainfall greater than 0.02 inches per hour; the excess flows bypass the plants and discharge directly into San Francisco Bay and the Ocean. Plans are currently being implemented to reduce these overflows and bring the City sewer system into compliance with Regional Water Quality Control Board requirements. Bayside dry-weather facilities (secondary treatment) are scheduled to begin interim operation in December, 1982. Dry-weather flows from the area would be treated at the Southeast Water Pollution Control Plant, which would treat average dry-weather flows of 85 MGD. Peak capacity at the Plant would be 140 MGD after expansion. The North Point Plant would be used to treat wet-weather flows until completion of the Citywide wet-weather system, probably near the end of the decade, and at that point the North Point Plant would probably be closed./9/

Solid Waste. No solid wastes are currently generated on the site. Collections from the Hilton Hotel and Tower are made daily by the Golden Gate Disposal Company under contract to the City of San Francisco. The Hilton uses a 20-cubic-yard compaction unit which currently has approximately five cubic yards of excess capacity./10/ Wastes are taken to a transfer station immediately north of Brisbane and then transported to a landfill site at Mountain View Shoreline Regional Park. The Sanitary Fill Company handles the transfer and disposal of San Francisco's municipal solid wastes (MSW) under regulation by the City of San Francisco Board of Supervisors. The landfill contract with the City of Mountain View expires in 1983; no other agreements have as yet been secured for disposal of solid waste at the Mountain View site or any other landfill site. The Sanitary Fill Company has prepared a proposal for a Resource Conversion Center, which would be constructed just south of the site of the existing transfer station, in the City of Brisbane. Combustible and non-combustible materials would be separated; combustible materials would be burned to produce energy. Ferrous metals and a mixture of non-ferrous metals would be recovered separately for sale. The remaining non-combustible

material (glass, ceramic material, ash) would be sent to landfill; it would constitute less than 15% of the MSW as received. The City of San Francisco is currently reviewing this proposal and several other alternatives, but no decision has yet been reached./11/

Telephone. The Hilton Hotel telephone system is an internally owned IT&T system with a central switchboard. Pacific Telephone and Telegraph (PT&T) provides outside connection service. PT&T has conduit capacity of about 100 additional lines to the Hotel at present./12/

NOTES - Community Services and Utilities

/1/ J. P. Shannon, Deputy Chief of Police, Administration, San Francisco Police Department, letter communication, 12 February 1980. This letter is available for public review at the epartment of City Planning, Office of Environmental Review.

/2/ San Francisco Police Department, Incidents for Which a Police Report Was Made, by District, Plot and Crime, Jan - Dec, 1979. "Plot", in this case, refers to Statistical Reporting Area 360.

/3/ E. Bozant, Director of Security, San Francisco Hilton Hotel, telephone communication, 13 February 1980.

/4/ Chief R. E. Rose, Division of Planning and Research, San Francisco Fire Department, letter communication, 26 February 1980. This letter is available for public review at the Department of City Planning, Office of Environmental Review.

/5/ G. Cope, Chief Engineer, San Francisco Hilton Hotel, telephone communication, 5 March 1980.

/6/ J. E. Kenck, Manager, City Distribution Division, San Francisco Water Department, letter communications, 14 February and 4 March 1980. These letters are available for public review at the Department of City Planning, Office of Environmental Review.

/7/ M. Francies, Engineering Associate II, Sewer Investigation, Engineering epartment, San Francisco Wastewater Program, letter communication, 14 February 1980. This letter is available for public review at the Department of City Planning, Office of Environmental Review.

/8/ R. Chin, Superintendent, North Point Water Pollution Control Plant, telephone communication, 20 February 1980.

/9/ D. Hayashi, Coordinator of Public Participation, San Francisco Wastewater Program, telephone communication, 7 March 1980, and D. Thompson, Public Clean Water Information Officer, telephone communication, 7 August 1980.

/10/ F. Garbarino, Office Manager, Golden Gate Disposal Company, telephone communication, 5 February 1980.

/11/ Resource Conversion Center, Final Environmental Impact Report, Prepared for the City of Brisbane, California, June 1980, State Clearinghouse Number 79051401.

/12/ D. Heinkel, Engineer, Pacific Telephone and Telegraph, telephone communication, 31 January 1980.

E. ECONOMIC, EMPLOYMENT AND FISCAL ASPECTS

ECONOMIC AND EMPLOYMENT ASPECTS

Hotel Space, Occupancy and Room Demand./1/ The existing San Francisco Hilton and Tower offers about 1,700 guest rooms. The 1979 average room rates were between $45-$55 per room, and the Hotel maintained an annual occupancy rate of over 85% in 1979. The highest monthly occupancy rate experienced by the hotel in 1979 (July) was slightly above 96%. The peak occupancy period is from June through November. About 45% of the Hilton Hotel's business is from conventions (see Table 3). According to the San Francisco Visitor's

TABLE 3: SAN FRANCISCO HILTON HOTEL ROOM DEMAND IN 1979, BY CATEGORY AND PERCENT

Category	Percent
Convention	45
Tours	20
Business	15
Permanent Rooms (Airline Personnel)	10
Other (Travel Agent Bookings, Vacation & Family Plans, Special Programs, Students, Unidentified)	10
	100 %

SOURCE: San Francisco Hilton Hotel

Information Bureau, the convention "season" is from May to October. The Hilton Hotel received a total of 59,100 reservation requests in 1979. The Hotel could not accommodate approximately 22,800 or about 39% of these total requests, primarily because there were no vacant rooms at the existing Hotel and Tower. Other reasons why reservations were not accepted were that room rates were not acceptable to the potential guest or the location of the Hotel was inconvenient for the requesters.

The Hilton Hotel compiles statistics of convention booking business losses. According to 1979 estimates, 10,400 room nights, valued at $582,400, were lost because of inadequate public-meeting and exhibition space, and the location of the hotel which was perceived as undesirable by some conventions. An estimated 27,100 and 14,500 room nights, valued at $818,100 and $869,400, are expected to be lost, respectively, in 1980 and 1981.

The Hilton Hotel currently leases about 39,140 sq. ft. of retail and restaurant space on its lower levels, including the Kiku and the Lehr Steakery Restaurants, which are not owned by the Hilton. The retail space is occupied by small shops which provide convenience items for guests of the Hotel.

The Hilton operates the 360-seat Gazebo Coffee Shop on the main lobby level of the original Hilton Hotel, Henri's Room at the Top and the Chef's Table restaurants and the Cable Car Lounge. Other food and bar services are provided through banquet facilities and room service. Gross 1978-79 receipts from restaurant, food and beverage operations were about $9.9 million; these do not include receipts from the rented restaurant and retail spaces discussed above.

Employment./2/ Current employment at the Hilton Hotel is about 900 permanent employees and 575 temporary (casual or extra) food-service employees (see Table 4). Based on a survey of Hilton's employees, about 2/3 (or about 585) of these employees are currently San Francisco residents. The average full-time employee salary is about $11,200 per year.

TABLE 4: CURRENT PERMANENT EMPLOYMENT BY CATEGORY AND PERCENT, SAN FRANCISCO HILTON HOTEL, 1979

	Total Number	Percent of Total
Management/Professional	40	4
Maintenance (includes bellpersons)	95	11
Food and Beverage (includes stewards)	325 *	36
Security	20	2
Housekeeping (includes laundry)	235	26
Front Desk	60	7
Clerical	125	14
TOTAL	900	100

*The Hilton Hotel also employs approximately 575 "casual or extra" food-service employees, such as extra dishwashers hired for banquets.

SOURCE: San Francisco Hilton Hotel

The affirmative-action policy of the Hilton Hotel states that all qualified persons will be hired by the Hilton Hotel without regard to race, color, religion, sex, age, national origin or physical handicap. All personnel actions such as rate of transfers, layoffs, suspensions and promotions are administered to provide equal employment opportunities/2/. An estimated 2/3 or about 585 of Hilton's employees are minorities. About 90% or 800 of the Hotel's employees are union members, with the majority (about 67%) belonging to the Hotel-Restaurant and Bartenders Union./3/

FISCAL ASPECTS

The existing Hilton Hotel and Tower and project site currently generate to the City and County of San Francisco an estimated $1.5 million in revenues, including total annual property tax ($655,100), hotel room tax ($404,400), sales tax ($122,300), payroll expense tax ($99,800), and franchise tax ($224,600) revenues.

Assessed Valuation and Property Taxes. Block 325, which contains the existing Hilton Hotel and Tower (Lot 30) and the project site (Lot 27), has a total

1979/80 assessed valuation of $15,506,100. At the 1979/80 total composite tax rate of $4.97 per $100 of assessed value, approximately $770,700 will be generated in property tax revenues from the existing hotel ($750,200) and the project site ($20,500). Of this amount, about $655,100 (85%) will accrue to the City and County of San Francisco. These revenues will be distributed as shown in Appendix D, Table D-1, p. 206.

Hotel Room Tax. In the 1979-80 fiscal year, the City and County of San Francisco levied a hotel room tax of 8% of gross room rental sales. The distribution of these revenues is presented in Appendix D, Table D-2, p. 207. At the 8% rate, the existing Hilton Hotel and Tower will generate about $2.1 million in hotel room tax revenues in 1979-80, with about $404,400 accruing to the City's General Fund. Hotel room tax revenues collected in San Francisco are deposited in the City's Hotel Tax Fund and are allocated according to City Ordinance 251-78./4/ In 1979-80, approximately 50% (4¢ per dollar of total revenues) of the Hotel Tax Fund was earmarked for the construction of the George R. Moscone Convention Center; after construction is completed, revenues will be used for the operation and maintenance of the Center and for payment to the San Francisco Redevelopment Agency for the ground lease. (The Redevelopment Agency pays for Yerba Buena bond debt from the ground lease revenues.) Of this Fund, 6.23% was used for payment of Candlestick Park bond debts, and another 6.23% for financing low-income housing within the Yerba Buena Redevelopment Area. Within the remaining 37.5% of the Fund, a budget was allocated for the Hotel Publicity and Advertising Fund; any remaining revenue were transferred to the City's General Fund. The amount of hotel tax revenue generated to the City's General Fund from the Hilton Hotel and Tower will increase in the 1980-81 fiscal year due to the passage of Proposition O in the June 1980 election. This Proposition increases the hotel tax to 9.75% of gross room sales./5/ No hotel tax revenues are currently generated from the vacant project site.

Other Revenue Sources. Based on gross food and beverage receipts, the Hilton Hotel and Tower generated about $643,800 in 1979-80 sales tax revenues (6.5% of $9.9 million gross receipts) at the hotel. Of this amount, approximately $122,300 will accrue to the City and County; about $51,500 to BART and about $470,000 to the State. The Hilton Hotel also generates sales tax revenues

from the 39,100 sq. ft. of retail space. These revenues cannot be quantified because reliable estimates of sales per square foot are not available.

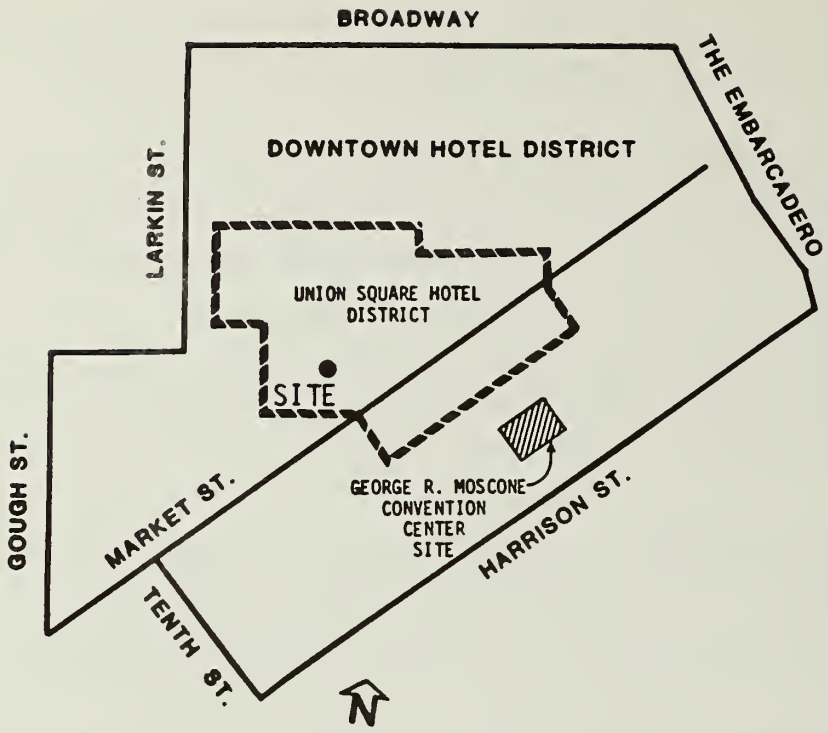
The estimated 1979-80 revenues from payroll expense taxes are $99,800. Proposition Q, which would increase the payroll expense tax from the current rate of 1.1% to 1.5% per $1,000,/6/ recently passed in the June 1980 election; this measure was passed by 55% to 45% margin. Since Proposition 13 states that "Special Taxes" must be passed by two-thirds of the voters, the question of whether Proposition Q constitutes a "Special Tax" is currently being adjudicated.

Franchise tax revenues from Hotel telephone and gas-and-electric payments are estimated at $224,600./7/ The vacant project site does not generate any sales, payroll expense or franchise tax revenues to the City and County.

Existing Costs. The City and County currently incur some costs to provide services to the Hilton Hotel and Tower, such as fire and police protection, street lighting and cleaning, and street and storm-drain maintenance. The Department of Public Works indicates that operating costs to provide services for individual developments cannot be reliably quantified in San Francisco./8/

SAN FRANCISCO HOTEL DEVELOPMENT: EXISTING CONDITIONS

Hotel Room Stock, Rates and Occupancy. There are currently an estimated 14,700 quality hotel rooms/9/ in the downtown area, with daily room rates for single occupancy ranging from about $30 to about $120./10/ The Union Square downtown hotel district (the area generally bounded by Bush, Stockton, Sutter, New Montgomery, Second, Mission, Mint, Turk, Leavenworth, Geary and Hyde Sts.) which includes the project site contains approximately 9,500 or 65% of all quality rooms in the downtown area (see Figure 18). Sixteen hotels, including the Hilton Hotel and Tower, provide about 60% of the quality hotel rooms in the downtown area and have single occupancy room rates of $50 or more. Areawide occupancy rates are available only for first-class/9/ hotels which generally consist of hotels with daily room rates of $50 or more. The current annual areawide occupancy rate for first-class hotels is estimated at about 82% in the 1978/79 fiscal year and 83% in the 1979/80 fiscal year./11/



SOURCE: San Francisco Convention and Visitors Bureau

FIGURE 18: DOWNTOWN AND UNION SQUARE HOTEL DISTRICTS

San Francisco Tourist Industry. According to the most recent available estimates of the San Francisco Convention and Visitors Bureau, there were an estimated 3.5 million combined (convention and non-convention) tourists in San Francisco in 1979; they spent an estimated total of $1,054 million, a 27% increase above 1978 total tourist expenditures. Tourists and commercial travelers (non-convention visitors) represent about 88% of total visitors and generated about 68% of total tourist expenditures. The average annual growth in tourists and commercial travelers was 12.9% from 1969 to 1979 and 7.2% from 1973 to 1979. During 1979 there were 780 trade shows and conventions in San Francisco, including about 30 which had over 5,000 delegates each.

Convention participants represented about 12% of total tourists, but generated about 32% of total tourist expenditures, making convention trade an important segment of the San Francisco tourist market. The average annual growth in convention delegates was 5.4% from 1969 to 1979 and 0.6% from 1973 to 1979. The most substantial decline was an 8.8% drop in convention visitors between 1977 and 1978. The principal reason for this decline was a lack of adequate

facilities for conventions and large trade shows./12/ The completion of the George R Moscone Convention Center in 1981 is expected to increase convention visitors 30% annually by 1985. An estimated 2,700 to 3,500 new rooms would be required in San Francisco to meet the increased hotel room demand by persons attending conventions at the George R. Moscone Convention Center./13/ This room demand does not include increased room demand that would be attributable to additional tourists, commercial travelers and other convention participants.

Existing Hotel Room Demand. There is currently a shortage of quality hotel rooms in San Francisco, as indicated by the current loss of hotel business or "turn-away" demand for hotel accomodations in the City./14/ This turn-away demand occurs principally in the commercial traveler segment when accommodations are full (or desired room sizes are not available) from Monday through Thursday, and in the tourist segment during weekends and the summer tourist season. Annual occupancy rates are a rough indicator of losses in hotel business or turn-away hotel room demand. Occupancy rates of over 75% generally indicate that hotel occupancies were 95% and above for certain portions of the year, resulting in turn-away demand./15/

An increase in hotel rooms sufficient to recapture business currently being lost is not expected until 1982, when several new hotels would be completed. Areawide occupancy rates are expected to rise from 82% to 84% and room rates are expected to increase 12% per year between 1980 and 1982.

Hotel Room Tax Contributions. Approximately $20 to $22 million of total hotel room tax revenues will be collected in San Francisco for fiscal year 1979-80./16/ About 16 hotels (including the existing Hilton Hotel and Tower). containing about 10,000 rooms, generated 67% of hotel room tax revenues collected in the 1978/79 fiscal year. Forty-one hotels (including the above-mentioned 16 hotels) containing about 14,300 rooms generated about 85% of revenues; another 274 hotels (not including the 41 hotels mentioned above) generated the remaining 15% of revenues. Hotel room tax revenues increased at an annual average rate of 16% during the period from 1973 to 1978.

Residential Hotel Conversion Ordinance. The San Francisco Board of Supervisors has enacted a moratorium effective since November 1979, on the

demolition of residential hotel units for non-residential construction and the conversion of residential hotel units to tourist hotels and other uses (such as condominiums). The moratorium, in effect until 30 November 1980, is an emergency measure and was enacted in response to the unmonitored, although increasing, number of residential hotels being converted and demolished in San Francisco, particularly in the Tenderloin neighborhood./17/ According to the Ordinance more than 20,000 persons live in residential hotel housing and at least 2,200 residential hotel units have recently been or will be permanently converted to tourist hotel units.

NOTES - Economic and Employment Aspects

/1/ T. Salazar, Front Office Manager, San Francisco Hilton Hotel, telephone communication, 11 February 1980.

/2/ Hilton Hotel, Affirmative Action Policy. A copy of the San Francisco Hilton Hotel Affirmative Action policy is available for public review at the Department of City Planning, Office of Environmental Review.

/3/ W. Lewin, Vice President and General Manager, San Francisco Hilton Hotel, written communication, 7 April 1980. This information is available for public review at the Department of City Planning, Office of Environmental Review.

/4/ J. Igoe, Project Coordinator, George R. Moscone Convention Center, telephone commnication, 21 March 1980; P. Dement, Administrator, Hotel Tax Fund, Chief Administrator's Office, City of San Francisco, telephone communication, 29 January 1980; and San Francisco Board of Supervisors, 22 May 1978, Hotel Room Tax Fund Allocations, Ordinance No. 251-78, File No. 237-78.

/5/ San Francisco Board of Supervisors, 12 March 1980, Hotel Occupancy Tax Surcharge (Proposition O), File No. 128-80-1.

/6/ The San Francisco Payroll Expense Tax is now 1.1% of the payroll expense tax attributable to San Francisco. The estimated payroll expense tax is based on the Hilton Hotel's average annual full-time salary of $11,200 and assumes that 90% of this payroll is eligible for tax at the 1.1% rate.

/7/ Franchise taxes are levied against gross payments by businesses for telephone, and gas and electric services. The rate is currently 5.5% for telephone bills and 5% for gas and electric bills.

/8/ R. Evans, Assistant Director, San Francisco Department of Public Works, telephone communication, 27 March 1980.

/9/ There is no standard definition of quality hotel rooms in San Francisco. Various private automobile and travel associations such as the American Automobile Association and Mobile Travel Guide rate the quality of San Francisco hotels, but each organization uses different criteria so that

there is no uniform rating classification. The San Francisco Convention and Visitors Bureau does not classify hotels. Based on conversations with D. Hess, Assistant Manager of the San Francisco Convention and Visitors Bureau, and with J. Wilkensen, a Financial Analyst at Laventhol and Horwath (a certified public accounting firm specializing in hotel developments), indicate that hotels containing quality hotel rooms in San Francisco generally have average single-room occupancy room rates of $50.00 (1980 dollars) and one or all of the following services and amenities: air conditioning; swimming pool / health club; 24-hour room service; specialty restaurant; entertainment lounge; and free guest parking facilities. First-class and deluxe first-class hotels are considered quality hotels and would have most or all of the services and amenities mentioned above.

/10/ Estimates of the downtown hotel room stock were determined in consultation with D. Hess, Assistant Manager, San Francisco Convention and Visitors Bureau, telephone communication, 1 April 1980. The total estimated 14,700 downtown hotel rooms do not include 1,500 hotel rooms located in the Fisherman's Wharf area.

/11/ Laventhol and Horwath, 1 March 1979, Projected Hotel Tax Collections for San Francisco, Schedule 2; hereinafter referred to as Laventhol and Horwath.

/12/ San Francisco Convention and Visitors Bureau, June 1978, 1978 Annual Report.

/13/ Laventhol and Horwath, p. 5.; and R. Sullivan, General Manager, San Francisco Convention and Visitors Bureau, telephone communication, 4 April 1980.

/14/ Laventhol and Horwath, December 1979, Proposed 1000-Room Ramada Hotel, Market Study with Financial Projections, p. VI-8.

/15/ Laventhol and Horwath, Schedule 4.

/16/ J. Wilkensen, Hotel Financial Analyst/Consultant, Laventhol and Horwath, telephone communication, 1 April 1980.

/17/ Board of Supervisors, 11 November 1979, Moratorium on the Demolition or Conversion of Residential Hotel Units, Ordinance No. 564-79, File Number 384-77; and G. Skiffer, Housing Coordinator, Department of City Planning, telephone communication, 28 March 1980.

F. TRANSPORTATION, CIRCULATION AND PARKING

STREET AND FREEWAY SYSTEM

The Hilton Hotel is located in the block surrounded by O'Farrell, Ellis, Taylor and Mason Sts. Circulation around the block is clockwise; the grid

street system in the site vicinity mainly consists of one-way streets, introducing an element of travel circuitry for vehicular trips. The street system in the site vicinity is shown in Figure 1, p. 7, Figure 30, p. 126 and Figure E-11, p. 228. The right-of-way characteristics for these streets are listed in Table E-1 of Appendix E, p. 208. (The area surveyed is bounded by Fifth St. North, and Eddy, Jones, Geary, Powell and Ellis Sts.) Major thoroughfares as designated in the Transportation Element of the San Francisco Comprehensive Plan are shown in Figure E-1 of Appendix E, p. 211. There are no secondary thoroughfares, recreational streets or bicycle routes as designated by the Plan in the site vicinity. O'Farrell St. is a transit-preferential street, with the south lane designated as a diamond lane (buses only) between 7:00 and 9:00 a.m. The current daily evening peak-hour and highest eight-hour traffic volumes for the streets receiving the highest impacts from project traffic are listed in Table 5.

Regional service is provided by the freeways - Interstate Routes 80 and 280. The westbound on-ramps to Route 80 are located at Fourth St. and at Seventh St.; there is an eastbound on-ramp at Fifth St., providing a connection to Interstate Route 480 and the Oakland-Bay Bridge. The westbound on-ramp to Route 280 is at Sixth St. These ramps are from three-fourths to one mile south of the site. Further south, both Interstate routes have interchanges with U.S. Route 101.

The four intersections at the corner of the project block are signalized. Volume/capacity analyses were made for these intersections to ascertain their current operating conditions. (Volume/capacity ratios were computed using critical lane procedures, with reductions in standard lane capacity values to account for the heavier than normal pedestrian movements.) Much of the Hilton Hotel traffic is oriented to the regional airports; consequently, the capacity analyses were extended to include the intersections of Fourth, Fifth, Sixth and Seventh Sts. with Market St., since these streets would be used as routes to and from the freeway ramps. Traffic congestion increases as the volume/capacity ratio approaches 1.0. (Operating conditions described by Levels of Service A through F and corresponding volume/capacity ratios are described in Appendix E, Table E-2, p. 213.) The current volume/capacity ratios of these intersections during the p.m. peak hour are listed in Table 6,

p. 50. As shown in Table 6, all intersections studied are currently operating at Level C or better.

TABLE 5: 1980 VEHICLE VOLUMES IN THE HOTEL VICINITY

Street	Section	24 Hours*	Peak Hour**	Max. 8 Hours
Turk	Mason-Jones	6,200	500	3,530
Eddy	N. Fifth-Jones	5,700	520	3,250
Ellis	Stockton-Jones	12,600	990	7,190
O'Farrell	Stockton-Jones	11,300	660	6,440
Geary	Stockton-Jones	14,000	1,120	7,980
Stockton	Market-O'Farrell	10,500	900	6,000
N. Fifth	Market-O'Farrell	7,500	600	4,280
Mason	Market-O'Farrell	5,700	460	3,250
Taylor	Market-O'Farrell	10,700	890	6,100
Fourth	Market-Mission	8,400	760	4,800
Fifth	Market-Mission	11,700	1,000	6,700
Sixth	Market-Mission	12,900	1,100	7,380
Seventh	Market-Mission	17,000	890	9,690
Market	Fourth-Seventh	8,800	750	5,010

*Daily traffic volumes and maximum eight-hour counts were derived from historical data for 1974-1976 obtained from City Bureau of Traffic Engineering records. These volumes were updated and modified as necessary by peak-hour traffic counts made on Friday, 20 July 1979 and on Tuesday, Thursday, Friday and Monday, 19, 21, 22, and 25 February 1980.
**Peak-hour volumes are for the single peak hour during the peak period between 4:00 and 6:00 p.m. These volumes are based on manual intersection counts made on the weekdays noted above.

TABLE 6: 1980 P.M. PEAK-HOUR VOLUME/CAPACITY RATIOS AND LEVELS OF SERVICE* (Based on weekday counts taken in July 1979 and February 1980)**

Intersection	V/C Ratio	LOS	Critical Approach (Direction)
O'Farrell - Taylor	0.56	A***	Northbound
O'Farrell - Mason	0.57	A***	Southbound
Ellis - Taylor	0.58	A	Westbound
Ellis - Mason	0.76	C	Westbound
Fourth - Market	0.50	A	Southbound
Fifth - Market Bound	0.46	A	Northwest
Sixth - Market	0.74	C	Eastbound
Seventh - Market Bound	0.54	A	Northwest

*Capacity is defined as Service Level E.
**Traffic counts and schematics of the geometric designs of the intersection are given in Figures E-2 through E-11 of Appendix E, pp. 208 - 228.
***The Level of Service A designation at the O'Farrell Street intersections with Mason and Taylor Sts. may be misleading. At times during the afternoon, congestion develops at O'Farrell and Powell Sts.; during these periods, traffic can back up on O'Farrell through its intersection with Fifth St. North, Mason and Taylor Sts.. When these backups occur, by definition these intersections are operating at Level F, even though they can otherwise handle unrestricted flow at Level of Service C or better (Transportation Research Board, Highway Capacity Manual, 1965).

EXISTING HILTON HOTEL OPERATIONS

Traffic movement on the streets adjacent to the project block is one-way in a clockwise direction: traffic moves westbound on Ellis St.; northbound on Taylor St.; eastbound on O'Farrell St. and southbound on Mason St. (see Figure E-11, p. 223). This movement facilitates the loading and unloading of passengers on the right hand side of each of the streets. Currently, taxis

queue at the main hotel entrance on Mason; the queues frequently extend north of O Farrell St. Taxi loading was observed to occur only at the Mason St. entrance; however, while most unloadings occurred at this entrance, taxi unloading movements were also observed to occur on a random basis midblock and at the corners of the project block. The garage and auto registration entrance and exit is located at a common driveway on the north side of Ellis St. near Mason St. The westbound traffic flow on Ellis St. restricts the arrival and departure movements to right turns in and out. The truck loading bays on site are served by a midblock driveway on Ellis St. west of the garage driveways. The approach movements are made by trucks backing into the bay and departure movements are made by right turns. The backing maneuver was observed to impinge momentarily on the flow of the pedestrian traffic on the sidewalk, but the greatest disruption occurred to the vehicular traffic on Ellis St., as large tractor-trailer rigs maneuvered into the bays. Trucks waiting for an available bay were also observed to periodically block a traffic lane.

Tour buses currently load and unload on Ellis St. before 9:00 a.m. with no observed operational problems. This activity is transferred to the O Farrell St. entrance adjacent to Mason St. after 9:00 a.m. (end of diamond lane restriction on O'Farrell St.). Loading maneuvers at this latter location sometimes conflict with the Muni bus stop at the corner and the concentration of pedestrian traffic in the vicinity of the O'Farrell St. entrance.

An estimated 60 buses, including charter buses and tour buses, visited the Hilton Hotel daily during a weekday survey. The peak hours for these buses were from 1:00 to 2.00 p.m and 5:00 to 6:00 p.m There were about 40 service vehicles observed daily during the survey period, with all but five occurring before 4:00 p m.

PARKING AVAILABILITY

Existing off-street parking facilities in the project area are shown in Appendix E, in Figure E-12, p. 225. Surveys of these facilities conducted on Wednesday, 18 July 1979 and Saturday, 16 February 1980 indicated that a total of about 5,360 spaces are provided. Of these, about 1,070 are rented on a

monthly basis, leaving about 4,290 spaces, or about 80% of the total, available for public use. These include the existing spaces on the sites of the proposed Holiday Inn (80 spaces) at Mason and O'Farrell Sts. and Hotel Ramada (150 spaces) at Eddy St. and Fifth St. North and the public spaces (213 spaces) in the existing Hilton Hotel garage. At the first two locations, the spaces would be eliminated by the construction of the proposed hotels; at the Hilton, the public spaces are assumed to remain the same following the construction of the proposed Tower No. 2. There are also 330 existing parking spaces available for guests of the Hilton Hotel within the original Hilton which was constructed as a motor hotel. Typically, 1/2 to 2/3 of these spaces are occupied. However, during local conventions at the hotel when a large number of guests drive in from elsewhere in Northern California, the public garage and guest parking is 100% occupied; based on 1979-80 records, this would occur from about three to five weeks per year./1/

Details of the operation of the off-street lots in the vicinity are shown in Appendix E, Table E-3, p. 224. As noted in the Table, many of the lots experience a second loading and unloading in connection with theater traffic in the evening. The average weekday occupancy rate of all the offstreet facilities is about 83% of the spaces available for public use. The turnover rate varies from 0.6 to 3.0 per weekday.

The figure for the number of available spaces does not describe the full number of off-street parking spaces sometimes available to the public. Most hotels in the area make their parking lots available for public use when the lots are not reserved for guest parking. This supply varies with the hotels' business cycle and, therefore, is not available at peak times. Also, parking lot attendants seldom turn away a short-term customer. All of the stalls might be filled, but these customers are accepted and the vehicles stored in service areas, aisles, or any other space which might be available. This supply is acknowledged but its amount is unknown. Short-term off-street parking is generally available throughout the normal business day.

Two actions by the City affect the off-street parking conditions in the site vicinity. The first is an ordinance passed in 1975 prohibiting the installation of new parking facilities within walking distance of the Moscone

Center; the exception is accessory parking, which would be the case with guest parking at the hotel. The second is an amendment to the Transportation Element of the Comprehensive Plan placing the site within an area peripheral to the Downtown Core area designated as appropriate for short-term parking facilities./2/

Existing on-street spaces as of February 1980 were inventoried on streets in the vicinity of the project site. These spaces are broken down by street and type in Table E-4 of Appendix E, pp. 226 - 228. The area surveyed is bounded by McAllister, Leavenworth, Sutter, Grant, Mission, and Market Sts.; Sutter, Grant and Mission Sts. themselves were not surveyed. The totals of the inventory are:

Metered Regular	Metered Loading	Yellow Zones	White Zones	Taxi Zones	Green Zones	Handicapped
723	102	198	154	8	9	1

The occupancy rate for on-street parking is about 94% during typical week days. Observations ranged from a low of about 88% to a high of 100% at mid-day. The turnover rate is estimated at 1.8 vehicles per hour per space. There is no evidence that on-street parking is readily available at night, since parking is saturated at any hour that special events are held in the area.

Overall use of on-street parking spaces is conditioned by several factors. The general scheme to handle peak-hour movement is to prohibit parking between 7:00 a.m. and 9:00 a.m. on the eastbound (inbound) streets and between 4:00 p.m. and 6:00 p.m. on the westbound (outbound) streets in the area of the project site. Also, some metered spaces are designated as truck loading zones from 7:00 a.m. to 1:00 p.m. or during the afternoon period. The standard loading (yellow) zones apply from 7:00 a.m. to 6:00 p.m. (unless peak-hour parking is prohibited) from Monday through Saturday. These zones are available for general parking at other times except when prohibited to allow street sweeping. The passenger loading zones apply whenever the adjacent business is open, which, in some cases is 24 hours a day, seven days a week.

PEDESTRIAN SETTING

Pedestrian traffic on the sidewalks adjacent to the site was counted at the noon and afternoon peak periods on 1980 weekdays. Approximately 9.6 pedestrian trips per occupied room are generated per day. About 13% of the total daily pedestrian trips occur at the peak noon hour between 12:00 noon and 1:00 p.m. The pedestrian traffic flow levels were then calculated and are shown in Table 7. Pedestrian flow levels are defined in Table F-1, Appendix F. p. 229.

TABLE 7: 1980 WEEKDAY PEDESTRIAN VOLUMES ON SIDEWALKS ABUTTING THE PROJECT BLOCK* - PEAK 15-MINUTE PERIOD

				Maximum 15 Minutes			
		One-Hour Volume		Rate+		Pedestrian Flow Level++	
Sidewalk	Effective Width**ft.	Mid-Day***	P.M.	Mid-Day	P.M.	Mid-Day	P.M.
Taylor Street	6	400	250	1.5	0.9	Unimpeded	Umimpeded
O'Farrell Street	12	770	740	1.4	1.4	Unimpeded	Unimpeded
Mason Street	7	980	560	3.1	1.8	Impeded	Unimpeded
Ellis Street	7	370	440	1.2	1.4	Unimpeded	Unimpeded

*Based on counts taken on Wednesday, Monday, Thursday, Monday and Tuesday; 13, 18, 21, 25, 26 February 1980.
**Midblock
***12:00 noon to 1:00 p.m.
+Pedestrians per foot of effective width of sidewalk per minute
++See Appendix F, Table F-1, p. 229, for a discussion of pedestrian flow levels.

Pedestrian traffic crossing at the intersections adjacent to the site was counted on Monday and Thursday, 25 and 28 February 1980, and the results are shown in Table F-2 of Appendix F, p. 230.

The heavy pedestrian traffic on O'Farrell St. is localized adjacent to Mason St. in the vicinity of entrances to the existing hotel. This is the

site of a Muni bus stop and is an area currently used for charter bus loading after 9 00 a.m. On Mason St , some congestion was noted at the hotel entrance due to conflicts between the pedestrians traveling between the taxi queue and the entrance and those in the pedestrian sidewalk stream However, delays were minimal in all cases. In general, pedestrian traffic was observed to move unimpeded along the sidewalks and through the intersections.

It is assumed that there would be a strong attraction to Market St. by future pedestrian traffic in connection with transit use commercial attractions, and especially, the Moscone Center which is now under construction. Therefore, the count program was expanded to include Market St. crossing points used at this time and to serve as a base for evaluating movement to and from the Moscone Center. Present pedestrian crossing traffic is shown in Table F-3 of Appendix F, p. 230. The peak pedestrian traffic occurs during the noon hour.

TRANSIT SERVICE

Transit service in the project site is provided on a local and regional basis as shown in Table 8. Transit-preferential streets in the surrounding area include Geary St. for outbound (westbound) buses, and O'Farrell St. for inbound (eastbound) buses. The O'Farrell St. diamond (bus) lane abuts the north side of the project site. Muni transit routes within the surrounding area are shown on Figure 19, p. 57. Also shown are the Powell St. BART station and the new Airporter Bus Terminal.

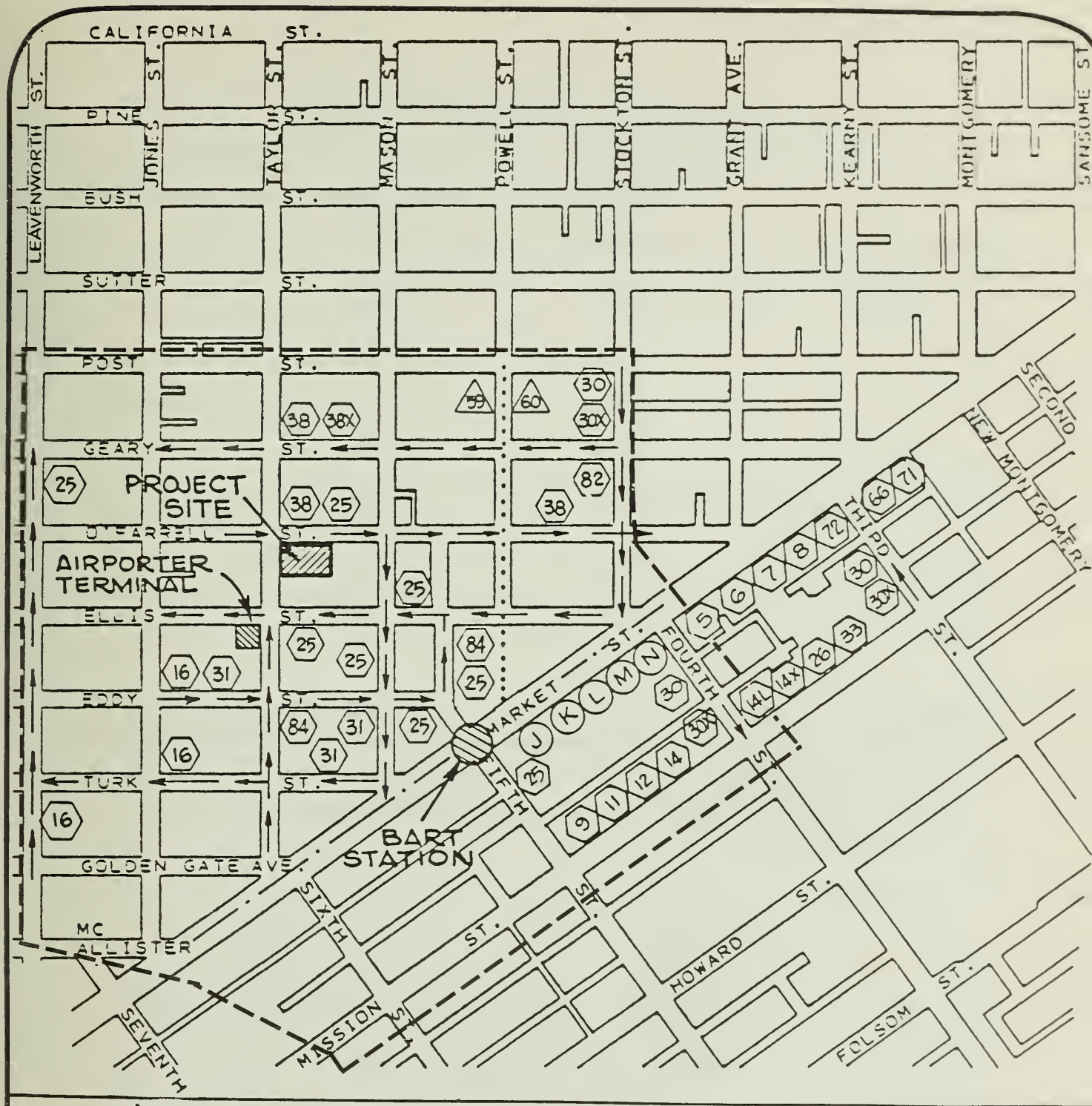
Muni ridership on the lines shown on Figure 19 (except cable-car lines) has been projected through 1982 by the Department of City Planning. Outbound peak-hour patronage volumes are expected to reach 92% of capacity overall by that year (see Table 9, p. 58) where bus capacity is considered to include one standee for every two seated patrons. The Powell St. cable car lines were observed to be operating near or at capacity during the 4 00 to 6:00 p.m. period at O'Farrell St., two blocks west of the hotel.

Two existing Muni lines in the immediate area of the project are proposed to be changed. A full discussion of these changes is included in the

TABLE 8. TRANSIT SYSTEM SERVICE AREAS AND AVAILABILITY IN THE PROJECT VICINITY

Transit System	Service Area	Available at
Muni	Local-San Francisco Area	See Figure 19, p. 57
BART	Local-Southwest San Francisco Regional-East Bay, Daly City	Powell St. Station Market and Fifth at Hallidie Plaza
AC Transit	Regional-East Bay	Terminal-Mission & First
SamTrans	Regional-Peninsula	Mission & Fifth
Southern Pacific Railroad	Regional-Peninsula	Terminal-Fourth & Townsend
Golden Gate Coach	Regional-North Bay	Bus-Van Ness & O'Farrell
Ferry		Ferry-Ferry Bldg.
Airporter (private)	San Francisco and Oakland Airports	Terminal at Ellis & Taylor
Lorries (private)	San Francisco and Oakland	On call to hotels
Harbor Carriers	Regional-North Bay	Ferry Bldg.

San Francisco Municipal Railway Five-Year Plan, 1979-1984./3/ The 25 line designation will be retired, and its coverage northerly off Market St. will be included in line 27. This line will operate on Fifth St. North, Ellis, and Taylor St. outbound and on Jones St., Ellis St. and Fifth St. North inbound. The 31 line now runs inbound on Eddy St. and Fifth St. North to Market St. and outbound on Turk St. from Market St. The outbound move will be changed to Fifth St. North from Market St. and then out Eddy St. These changes are contingent either on making Ellis St. and Eddy St. two-way streets or on installing contra-flow transit lanes. In the latter case, the street would remain one-way for private vehicles, but the exclusive transit lane would run in the opposite direction.



SOURCE: San Francisco Municipal Railway

FIGURE 19: TRANSIT LINES IN THE PROJECT VICINITY

TABLE 9: 1980 PEAK-HOUR* TRANSIT RIDERSHIP AND CAPACITY

	Riders	Capacity	% of Capacity
Muni**	15,900	17,400	92
BART Transbay	9,000	11,800	76
Westbay	8,000	11,800	68
AC Transit	9,600	11,300	85
SamTrans	1,000	1,250	80
Southern Pacific	7,000	10,000	70
Golden Gate Coach	6,200	6,900	90
Ferry	1,370	2,100	65
Airporter (private)	300	400	75
Harbor Carriers	430	700	61
Lorries*** (private)	40	50	80

*Peak direction only - Peak travel for all systems occurs between 4:00 p.m. and 6:00 p.m. Muni ridership is from projections of Muni patronage through 1982 by Transportation Planning.
**Lines: J, K, L, M, N, 5, 6, 7, 8, 9, 11, 12, 14, 14L, 14X, 16, 25, 30, 33, 38, 38X, 59, 60, 66, 71, 72. Total does not include cable cars.
***On call to hotels

Data Sources

Agency	Personnel	Date
BART	J. Stamas	16 April 1980
AC Transit	Offices of A. Winkler and W. Robinson	16 April 1980
SamTrans	L. Stuek, Supervisor of Program Development	16 April 1980
Southern Pacific Railroad	F. Pera, Manager - Commuter Traffic	21 February 1980
Golden Gate Transit	A. Zahraodnrk, Transportation Planner	21 February 1980
Airporter	J. Leonoudakis	21 February 1980
Harbor Carriers	C. Hogan, Dispatcher	21 February 1980
Lorries	T. Ruiz, Manager	21 February 1980

NOTES - Transportation, Circulation and Parking

/1/ T. Salazar, Front Office Manager, San Francisco Hilton Hotel, telephone communication, 1 May 1980; and E. Merling, Manager, San Francisco Hilton Hotel, telephone communication, 30 May 1980.

/2/ From Revisions to the Transportation Element of the Master Plan Regarding Parking (City Planning Commission, 1977).

/3/ San Francisco Municipal Railway Five-Year Plan, 1979-1984 (Muni, 1979).

G. AIR QUALITY

The Bay Area Air Quality Management District (BAAQMD; formerly the Bay Area Air Pollution Control District, BAAPCD) operates an air quality monitoring station approximately 0.6 miles to the southwest of the site. A three-year summary of the data collected at this station, the corresponding air quality standards and a discussion of major pollutants appear in Appendix G, p. 231.

San Francisco's air quality is the least degraded among the developed portions of the Bay Area. The prevailing westerly and northwesterly winds tend to carry pollutants from the City to the East Bay and South Bay. Annual fluctuations in air quality are due to a combination of meteorological factors, which vary unpredictably, and pollutant emissions, which have been decreasing in the Bay Area and are expected to continue to do so in the near future. Highest annual pollutant concentrations in San Francisco, while exhibiting alternating fluctuations due to meteorology, have shown an overall improvement during the 1971-1979 period. However, annual numbers of violations of air quality standards, while exhibiting similar fluctuations, have not shown any clear overall trend during the same period. In 1979 a total of three excesses of the carbon monoxide and particulate standards occurred.

The Bay Area Air Basin has been designated by the California Air Resources Board (CARB) as a non-attainment area for ozone (oxidant) and carbon monoxide; San Francisco is a non-attainment area for particulate (i.e., the standards

for these pollutants are now and are expected to continue to be violated). A regional Air Quality Plan was recently adopted which establishes control strategies (stationary-source and mobile-source emission controls and transportation improvements, implemented by CARB, BAAQMD and MTC) to attain and maintain the standards by 1982 or 1987./1/

NOTE - Air Quality

/1/ Association of Bay Area Governments, BAAQMD, and Metropolitan Transportation Commission (MTC), January 1979, 1979 Bay Area Air Quality Plan, San Francisco Bay Area Environmental Management Plan. The Federal Clean Air Act Amendments of 1977 mandate that the ozone and carbon monoxide standards be attained by 1982, although a five-year extension is possible. and that the particulate standard be attained by 1987.

H. NOISE

NOISE

As is typical of downtown San Francisco the noise environment of the site is dominated by vehicular traffic noise. Ground-level noise was measured at the three locations near the project site which would carry the highest traffic volumes or experience the largest project traffic increases, during the afternoon of Wednesday, 2 April 1980 (see Figure 20). The results are shown in Table 10, p. 62. The Environmental Protection Element of the San Francisco Comprehensive Plan (adopted 19 September 1974, p. 17) indicates an Ldn of 70 dBA on O'Farrell and on Taylor Sts. and 65 dBA on Mason St. in 1974./1/ The differences between the levels shown in the Plan and measured levels may be attributed to variations in traffic characteristics and differences in the methods of analysis.

NOTES - Noise

/1/ See footnotes to Table 10 for definitions of Ldn and dBA.

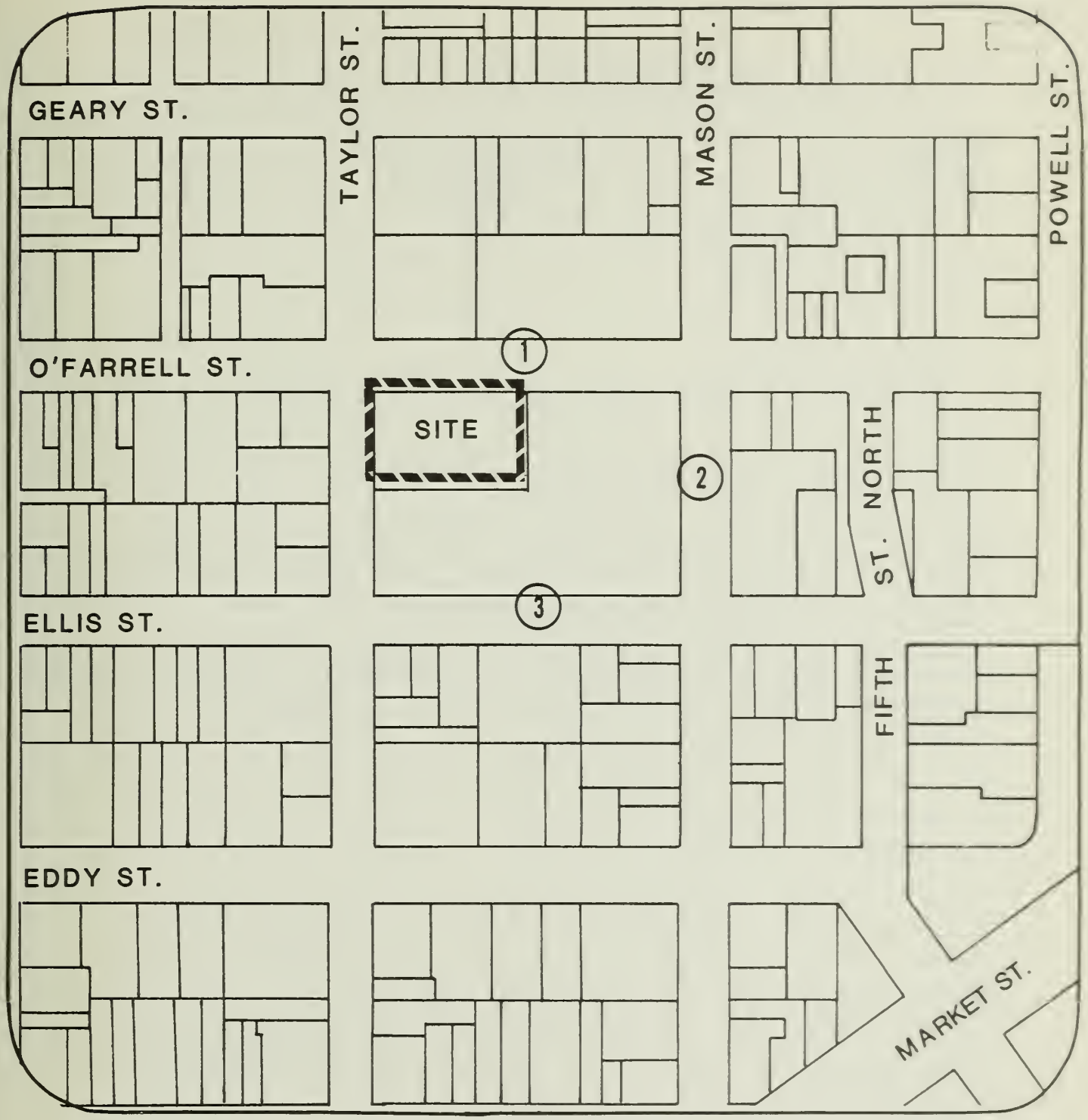


FIGURE 20: NOISE MEASUREMENT LOCATIONS

TABLE 10: NOISE LEVELS NEAR PROJECT SITE

Location	Approximate L10* (dBA)***	Estimated Ldn** (dBA)
1. O'Farrell St. between Taylor and Mason Sts.	75	72
2. Mason St. between O Farrell and Ellis Sts.	71	68
3. Ellis St. between Taylor and Mason Sts.	71	68

*L10 is the noise level exceeded 10% of the time. The L10 was measured at the location shown on Figure 20, p. 64 between 4:00 and 6:00 p.m., on Wesnesday 2 April 1980, with a Bruel and Kjaer sound level meter Type 2205 with a piezo-electric microphone type 4117.
**Ldn, the day-night average noise level, is a noise-level descriptor based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises (noise between 10:00 p.m. and 7:00 a.m. is weighted 10 DBA higher than daytime noise). Ldn is calculated on the basis of known traffic level variations over the 24-hour day.
***dBA is the measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale which simulates the response of the human ear to various frequencies of sound.

I. ENERGY

There is currently no energy use on the site. Pacific Gas and Electric Company (PG&E) provides gas and steam service to the vicinity. It also provides electricity to the vicinity from Substation Y at the northeast corner of Larkin and Eddy Sts. Present electrical voltage distribution to the area is 12,000 volts./1/ PG&E obtains a portion of its electrical energy from renewable resources including geothermal and hydrologic power; it will meet new demands for energy primarily by increasing the use of nonrenewable coal, oil, natural gas and nuclear fuels. Among the major new power plants which are anticipated by PG&E are the Diablo Canyon nuclear power plant in San Luis Obispo County, the proposed Portrero Unit Number Seven natural-gas-fired power plant in San Francisco County, and the proposed Montezuma coal-fired power plant in Solano County. Smaller increases in generating capacity will come

from additional geothermal plants and, in response to Public Utilities Commission (PUC) orders, from co-generation projects which generate electricity in combination with industrial processes which already use fossil fuels as a source of heat. Additionally, PG&E anticipates increased purchases of electricity from other utilities; this power would come primarily from hydroelectric and nuclear power plants in Washington State.

NOTE - Energy

/1/ L. Cordner, Engineering Office Representative, San Francisco Division, Pacific Gas and Electric Company, telephone communications, 7 February and 15 April 1980.

J. GEOLOGY, SEISMICITY AND HYDROLOGY

GEOLOGY

The site is vacant and generally level. Its slope is about 5%, rising to the northwest. The average elevation is about 62 ft. (above) San Francisco City Datum (SFCD), which itself is 8.6 ft. above Mean Sea Level. The site overlies the upper slope of a deep buried canyon of Franciscan Formation rock./1/ The canyon was subsequently naturally filled with deposits of marine alluvium, and windblown and freshwater deposits. Alluvium is a general term applied to stream deposits and generally consists of unconsolidated (loose, as opposed to rocklike) material./2/

The surface soil on the site is man-emplaced fill consisting of some concrete and brick fragments, and extends 10 to 15 feet below the surface. The fill was placed following demolition of the Downtown Airlines Bus Terminal, which had occupied the site; foundation elements of the demolished building, such as footings, piles and slabs, remain beneath the visible fill (Lee and Praszker, 1980). The soils underlying the fill are mostly dense to very dense sands, about 190 ft. deep. This material is composed of fine- to medium-grained sands with varying but small amounts of silt, clay and gravel./3/ Very sandy, silty, stiff clay occurs at 3 levels within the sand layers. The layers appear at about 30 ft., 65 ft., and 100 ft. below the surface and each layer

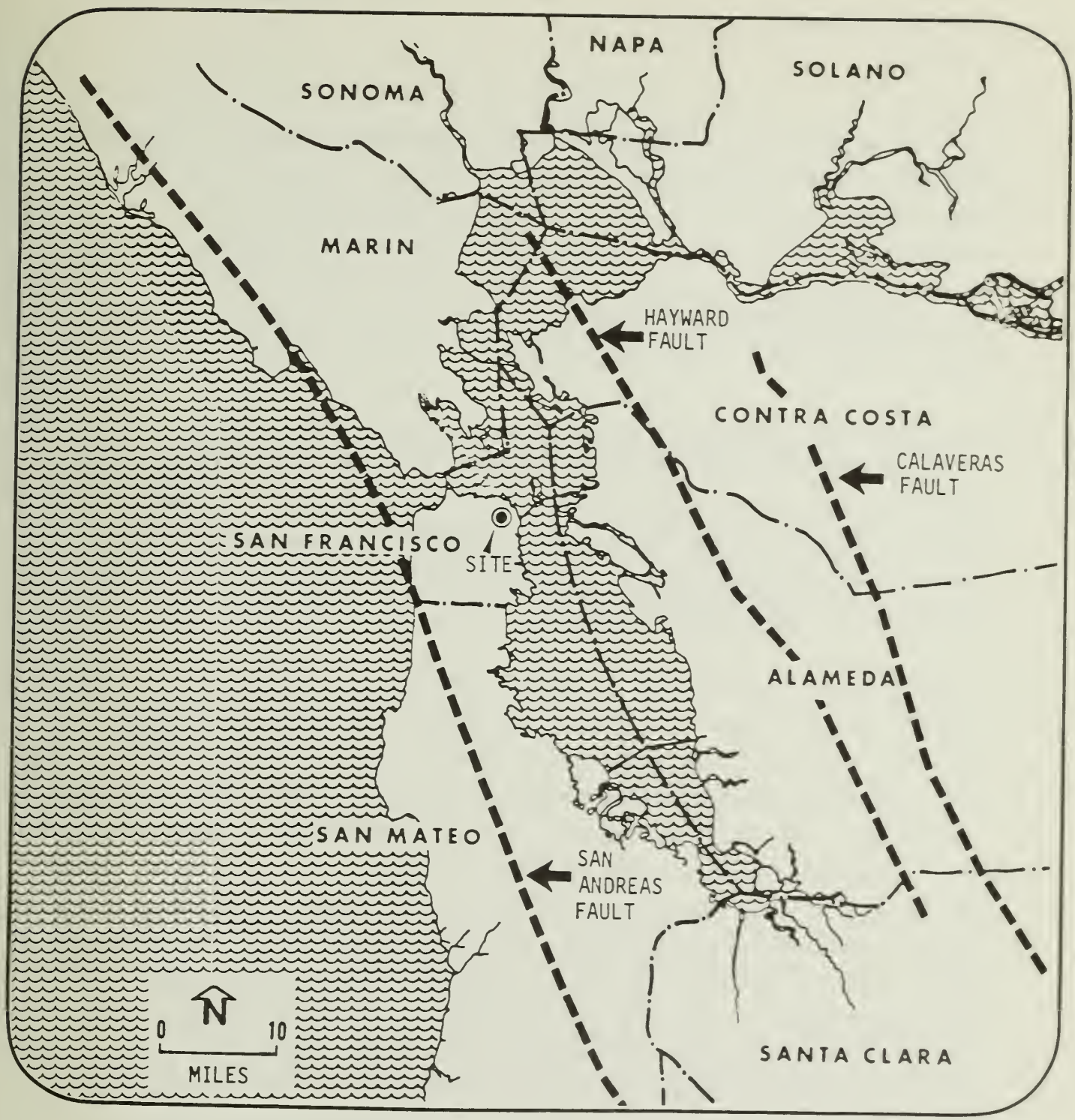
is about 10 to 15 ft. thick. Weathered and decomposed bedrock occurs at 190 ft. below the ground surface. About 15 ft. of decomposed, weathered sandstone/4/ and shale bedrock overlie the fresh rock./2/

SEISMICITY

No known active faults are located within the City of San Francisco. An active fault is a fault which has a historic record or other geophysical evidence of movement within approximately the last 10,000 years. Several active faults affect San Francisco. The San Andreas Fault is located about nine miles southwest of the site, the Hayward Fault about 15 miles to the east and the Calaveras Fault about 30 miles to the east (see Figure 21).

These three faults historically have produced major and minor earthquakes. Movement on the San Andreas Fault has produced the largest earthquake in the area, the 1906 San Francisco earthquake, which had an approximate magnitude of 8.3 on the Richter scale (a logarithmic scale developed by Charles Richter to measure earthquake magnitude by the energy released). Earthquakes are expected in the area in the future. Earthquake recurrence intervals vary, but several earthquakes comparable to the 1957 Daly City earthquake (about 5.3 on the Richter scale) and a major earthquake comparable to the 1906 San Francisco earthquake could be expected to affect the proposed project during its usable life. Recent earthquakes have been felt in San Francisco, but caused no damage there. The Greenville Sequence in Livermore occurred between 24 and 26 January 1980; the largest of these earthquakes measured 5.8 on the Richter scale. An earthquake of Richter magnitude 5.9 occurred on 6 August 1979 at Coyote Lake, approximately 70 miles southeast of the project site.

The site would be expected to experience "very strong" groundshaking which could cause masonry to crack badly and occasionally collapse, and could cause frame buildings to lurch when on weak underpinnings and occasionally to collapse./5/ According to the Lee and Praszker and the Blume report, there is no liquefaction or subsidence hazard on the site./6/


NAPA
SOLANO
SONOMA
MARIN
HAYWARD
FAULT
CONTRA COSTA
CALAVERAS
FAULT
SAN FRANCISCO
SITE
ALAMEDA
SAN MATEO
SAN
ANDREAS
FAULT
N
0
10
MILES
SANTA CLARA

HYDROLOGY

The site is presently unsurfaced and thus is somewhat permeable. Some of the stormwater probably percolates through the surface soils while most of the runoff flows onto Taylor St. and is collected by the combined stormwater / sewage system. Surface runoff is generally greatest during the November to April rainy season. Stormwater runoff from the site generally flows to the southwest, but it appears that the site would drain towards the southeast under natural conditions.

No water bodies, springs, or water courses are located on the site. The groundwater level appears to be about 50 ft. below the curb elevation, thus the groundwater level is about 10 ft. (above) San Francisco City Datum (SFCD). The source of the groundwater is probably surface absorption at higher elevations on Nob Hill. The groundwater is fresh water and is not influenced by tidal fluctuations./2/

The quality of stormwater runoff from the site and surrounding area has been degraded by urban uses. The primary pollutants would be oil, grease, gasoline, and rubber from motor vehicle traffic, and litter and organic materials. Soil material adds to silt levels in the runoff water.

NOTES - Geology, Seismicity and Hydrology

/1/ Franciscan rocks are typical of the northern California Coast Ranges and underlie the hills of San Francisco. They consist of a mixture of dark colored muddy sediments, red, green, and brown cherts and lava flows of black basalt, all material laid down on the floor of the Pacific Ocean about 100 million years ago. Cherts are rocks formed by deposits of silica containing microorganisms, which are transformed into hard waxy or porcelain-like rocks. See Roadside Geology of Northern California, David D. Alt and Donald H. Hyndman. Mountain Press Publishing Company, Missoula, Montana, 1975. Also known as Franciscan Formation or Franciscan Assemblage.

/2/ Lee and Praszker, 1980, "Geotechnical Input for Environmental Impact Report - Hilton Tower No. 2, San Francisco, California."

/3/ Sediment is classified by size as follows:

Sediment	Size (Millimeters)	Size (Approx. inches)
Gravel	2-4	0.08-0.16
Sand	1/16-2	0.0025-0.08
Silt	1/256-1/16	0.00015-0.0025
Clay	less than 1/256	Less than 0.00015

/4/ Sedimentary rocks are composed of sediment which has been cemented. Sedimentary rocks are generally classified by the size of the sediment making up the rock. That is, sandstone is made up of sand, siltstone of silt, and claystone and mudstone of clay.

/5/ URS / John A. Blume Associates, 1974, San Francisco Seismic Safety Investigation, prepared for the Department of City Planning, City of San Francisco.

/6/ Liquefaction is the earthquake-induced transformation of a stable granular material, such as sand, into a fluidlike state, similar to quicksand. Subsidence is the uneven local settlement of the ground's surface. Although it can occur under static (normal) conditions, it is frequently activated by strong ground motion, such as that from a major earthquake.

K. ENDANGERED SPECIES

No plant which is officially protected under either the Federal Endangered Species Act/1/ or the State Native Plant Protection Act/2/ was noted on the site. No plant which has been proposed for protection under these Acts/3/ was noted on the site. None of the above-mentioned categories of plants has ever been recorded on the site./4/ No animal species which is officially protected under either Federal or State Endangered Species Acts/5/ was observed on the site. Only one San Francisco animal has been proposed for protection under these Acts./6/ This is the San Francisco tree lupine moth (Grapholitha edwardsiana), a small moth which is almost totally dependent upon the tree lupine plant (Lupinus arboreus) for food and shelter. Neither the moth nor its plant habitat was observed on the site.

NOTES - Endangered Species

/1/ U.S. Fish and Wildlife Service, 1979a, "List of Endangered and Threatened Wildlife and Plants - Republication", Federal Register Vol. 44., No. 12, 17 January; and U.S. Fish and Wildlife Service, 1979b, "Endangered and Threatened Species - Plants", Federal Register Vol. 44, No. 198, 10 October.

/2/ Rae, Stephen, 1979, "List of Plants Protected Under the Native Plant Protection Act", California EIR Monitor, Vol. 6, No. 19, 15 December.

/3/ Ayensu, E.S., R.A. DeFilipps, S.E. Fowler, M.G. Mangone, C. M. Natella, and W.E. Rice, 1978, Endangered and Threatened Plants of the United States, Smithsonian Institution and World Wildlife Fund, Inc., Washington, D.C.; and Powell, R. W. ed., 1977, Inventory of Rare and Endangered Vascular Plants of California, California Native Plant Society, Arcata, CA.

/4/ Dr. S. Rae, State Plant Ecologist, California Department of Fish and Game, personal communication, 5 March 1980.

/5/ U.S. Fish and Wildlife Service, 1979a, op. cit.; and Department of Fish and Game, 1978, At the Crossroads, California State Resources Agency, Sacramento, CA.

/6/ U.S. Fish and Wildlife Service, 1978, "Endangered and Threatened Species - Animals", Federal Register, Vol. 43, No. 128, 3 July.

IV. ENVIRONMENTAL IMPACT

A. LAND USE AND ZONING

LAND USE

The proposed Hilton Hotel Tower No. 2, as an addition to the existing Hilton Hotel, would continue and expand the visitor hotel uses currently on the block. As the site is vacant, the proposed structure would displace no residents or businesses.

The project, in combination with the proposed Hotel Ramada and Holiday Inn on Mason St. (see Figure 22), would alter the character of the eastern Tenderloin District and could cause changes in the businesses currently located there. The overall variety of uses in the Tenderloin District would be expected to remain unchanged, but a portion of the businesses in the eastern Tenderloin near the hotels might become more oriented to the tourist trade. Some businesses which currently serve local residents might be converted to tourist-oriented retail stores, personal services offices, restaurants, nightclubs and other entertainment facilities see IV.L., p. 150). Parking lots and some old buildings might be replaced by new construction for tourist-oriented businesses.

A moratorium on conversion of residential hotels to transient-tourist hotel uses currently exists for the Tenderloin area. The moratorium is in effect until 30 November 1980. County Supervisors Doris Ward and Ella Hill Hutch, who represent the area,are currently preparing an ordinance making the moratorium permanent. They expect to bring the measure before the Board before the expiration of the moratorium in November. Local residents have voiced opposition to hotel conversions because of the displacement of residents and rising rents from increasing land values. In response to their concern, the City of San Francisco filed an application on 31 July 1980 with

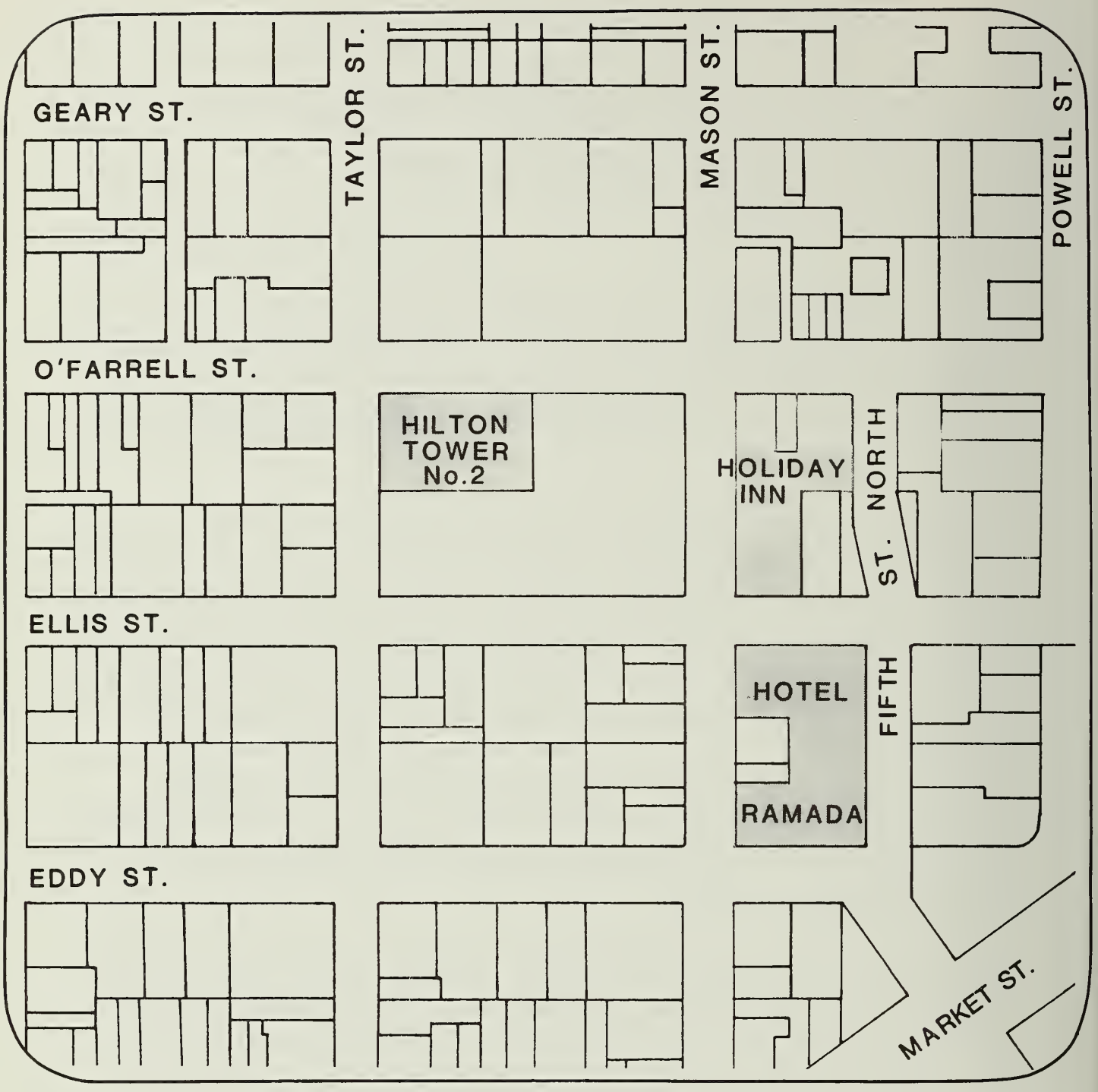


FIGURE 22 : CUMULATIVE HOTEL DEVELOPMENT IN THE VICINITY OF THE PROJECT SITE

the Department of Housing and Urban Development (HUD) for an Urban Development Action Grant (UDAG).

If approved by HUD. the Grant would be used to acquire and rehabilitate buildings containing about 900 residential-hotel rooms in an eight-block area between Mason and Leavenworth Sts. and Ellis and both sides of Turk Sts. Located directly east of the Hotel Ramada site, this area is in the North of Market Strategy Area in the midst of the Tenderloin. The Grant may be made only in conjunction with private investment in the area; this would be provided by the proposed 1,000-room Hotel Ramada. The rehabilitated rooms would be permanently preserved as low-rent housing.

Another major housing program planned for the Tenderloin is the Rehabilitation Assistance Program (RAP). The RAP program will provide below-market-rate loans to building owners to bring their buildings up to Code. The program is scheduled to begin in 1981 in a twenty-block area in the heart of the Tenderloin. Loan funds will be provided through the sale of bonds.

Comprehensive Plan. The proposed hotel project would comply with the permitted uses designated in Section 210 3 of the City Planning Code The project would meet the general objectives of the Comprehensive Plan, particularly Objective No. 7 of the Commerce and Industry Element This objective is to "enhance San Franciso's position as a national center for conventions and visitor trade... therefore, the City should encourage additional visitor-oriented facilities to locate in those areas where visitor attractions and businesses and conventions facilities are at the present time primarily concentrated"./1/ As an integral part of the Hilton Hotel and Tower, the project would be an extension of an existing visitor-oriented activity center devoted to the same uses as the proposed project. In addition, the project site is located in an area where other visitor-oriented facilities are located.

ZONING

Under the Planning Code the project would be considered to be part of the Hilton Hotel complex; thus, the entire block (including both the project site

and the existing space occupied by the Hilton Hotel and Tower) is considered in calculating the permitted Floor Area Ratio (FAR). The entire block has an area of 113,506 sq. ft., and the Basic FAR of 10 to 1 is, therefore, 1,135,060 sq. ft., exclusive of bonuses. The applicable land use in 1969 was 85,456 sq. ft.; the Basic FAR, then, was 854,560 sq. ft. Floor area bonuses totaling 193,631 sq. ft. were granted to Hilton in 1969 (see Table 11). The proposed project site would add 28,050 sq. ft. to the area of the original Hilton site and 280,500 sq. ft. to the Basic FAR. The bonuses for parking access and multiple building entrances would then each be increased by 14,025 sq. ft. An additional bonus of 29,520 sq. ft. would be allowable because the Tower No. 2 would shorten the walking distance through the interior of the block based on four routes through six entrances. In sum, 57,570 sq. ft. in bonuses directly attributable to the proposed project would

TABLE 11: CALCULATIONS FOR ALLOWABLE SQUARE FOOTAGE

		Sq. Ft.
Floor Area Ratio*	10 x 113,506 sq. ft.	1,135,060
Bonuses Granted in 1969		
Parking Access**	5% x 854,560 sq. ft.	42,728
Multiple Building Entrances**	5% x 854,560 sq. ft.	42,728
Side Setbacks	15,675 sq. ft. + 82,500 sq. ft	98,175
Observation Deck	10,000 sq. ft.	10,000
Adjustment of 1969 Bonuses for Increased Area of Site		
Parking Access***	5% x 280,500 sq. ft.	14,025
Multiple Building Entrances***	5% x 280,500 sq. ft.	14,025
Bonus not Computed in 1969 but Applicable due to Project		
Shortened Walking Distance (4 routes through 6 entrances)		29,520
TOTAL ALLOWABLE FLOOR AREA		1,386,261
Less Floor Area Already Developed in the Hilton Hotel and Tower		-1,048,517
ALLOWABLE FLOOR AREA REMAINING FOR PROPOSED TOWER NO. 2		337,744

*based on a total block area of 275 ft. x 412.75 ft. = 113,056 sq. ft.
**based on the FAR for the Hilton Hotel and Tower of 10 x 85,456 sq. ft. = 854,560 sq. ft.
***based on the FAR for the project site of 10 x 28,050 sq. ft.

be added to the Basic FAR and previously granted bonuses. The total allowable floor area for the entire block, including all bonuses, would then be about 1,386,260 sq. ft. As 1,048,520 sq. ft. is already developed in the existing hotel and tower, 337,740 sq. ft. remain for development on the entire block. As the proposed project would include about 318,860 sq. ft. of gross floor area, it would be about 18,880 sq. ft. below the maximum allowable floor area which could be developed by Hilton Hotels Corporation on the project site.

The project sponsor has applied for a Conditional Use authorization with the project given consideration as as Planned Unit Development (PUD). A PUD is a project on a site of considerable size (at least 1/2 acre), developed as an integrated unit and designed to produce an environment of stable and desirable character which will benefit the occupants, the neighborhood and the City as a whole. Section 304 (a) of the City Planning Code provides that, "In cases of outstanding overall design, complementary to the design values of the surrounding area, such a project may merit a well-reasoned modification of certain of the provisions" of the Planning Code. The PUD is not exempted from any height limit established by Article 2.5 of the Code unless explicitly authorized by the terms of the Code. As a Conditional Use, the project must meet criteria which are listed in Appendix A, p. 190. The base building of the proposed project would exceed by 20 to 25 ft. the maximum height of 40 ft. allowable for the granting of a side setback bonus (see Table 11, p. 72). If the project were not a PUD, the side setback bonus would require a variance granted by the Zoning Administrator. With the project as a PUD, this exception would be incorporated into the procedure for Conditional Use Authorization as set forth in Section 303 of the City Planning Code.

The project would comply with the maximum permitted height in the 320-I Height and Bulk District of 320 ft. and the maximum permitted length of 170 ft. Its diagonal dimension of approximately 180 ft. would be about 20 ft. less than the maximum permitted diagonal dimension of 200 ft.

NOTES - Land Use and Zoning

/1/ San Francisco City Planning Commission, Resolution 8001, adopted 29 June 1978.

B. URBAN DESIGN AND VISUAL ASPECTS

ARCHITECTURAL RESOURCES

The proposed project would not require demolition or alteration of any architectural resources in the vicinity of the project block, but would require a structural addition to the north of the base of the existing Hilton Tower, which has a summary rating of "2" in the Department of City Planning's architectural survey. The architectural character of this addition would be similar to that of the Tower and would, therefore, have no appreciable direct impact upon neighboring architectural resources. Possible indirect urban design and physical effects of project construction and operation are addressed in the corresponding sections of this report (see IV.B., below, and IV.H., pp. 137-142).

URBAN DESIGN AND VISUAL FACTORS

Project construction would constitute an infill development that would functionally integrate the project block. Traffic circulation would be generally improved by the addition of a porte cochere on O'Farrell St. that would remove a portion of the Hilton-related congestion from public streets (see IV.F., pp. 110-116). Pedestrian circulation would also be improved by shortened walking distances through the block, although such use of the internal circulation system of the hotel by the general public would probably be limited.

Architecturally, the proposed tower would be similar in scale and style to the existing Hilton development on the site and the hotel development proposed for the adjacent blocks to the east and southeast. The proposed Tower No. 2 would be intermediate in size between the existing 480-ft. Hilton Tower and the older 170-ft.-high hotel structure, providing a stepped transition between these two elements of the existing hotel. It would be generally larger in scale than, and different in style and character from, existing older development in the blocks to the south, west and north (see Figure 17, p. 34).

Street trees and the proposed porte cochere on O'Farrell St. would provide a degree of pedestrian amenity and interest at street level. The Taylor St. facade would largely consist of exit stairways and blank wall. Pedestrian activity on the Taylor St. frontage would not be visible from the interior of the hotel. Retail shop display windows would be added, where exit stairways permit, on Taylor St.. and a comprehensive landscaping plan for the entire block is proposed to provide human scale and interest.

The project would be partially visible from segments of neighboring streets, from buildings fronting on those street segments, from more distant, suitably oriented downtown highrises, and from structures at higher elevations to the northwest and north. It would not be visible to pedestrians from Russian Hill, but could be seen from Nob Hill (see Figure 23). In general, the project would interrupt few, if any, major views from structures to the north and northwest and would not intrude as a dominant element into the San Francisco skyline when seen from most distant vantage points, including Potrero Hill, and Twin Peaks (see Figures 24 and 25, pp. 77 - 78).

The Urban Design Element of the San Francisco Comprehensive Plan provides as a basis in City policy for summarizing the urban design implications of the proposed project (see Table 12, p. 79 - 82).

CUMULATIVE VISUAL EFFECTS

The proposed project would be generally visible in distant views of Downtown seen from the south and west, including views from Potrero Hill and Twin Peaks (see Figure 24, p. 77, and Figure 25, p 78). The project would not be generally visible in distant views from the north or east, as these views would be blocked by intervening taller structures and land forms.

In distant views of the site, the project would be seen as a visual element among several other existing and proposed hotel structures. The project would contribute to the visual density of development in the area and would increase its visual identity as a visitor-serving center. Because of the relatively

SOURCE: Environmental Science Associates, Inc.

FIGURE 23: VIEW OF PROPOSED HOTEL STRUCTURES FROM NOB HILL (Pine and Taylor Sts.)

SOURCE: Environmental Science Associates, Inc.

FIGURE 24: VIEW OF PROPOSED HOTEL STRUCTURES FROM POTRERO HILL

SOURCE: Environmental Science Associates, Inc.

FIGURE 25: VIEW OF PROPOSED HOTEL STRUCTURES FROM TWIN PEAKS

TABLE 12: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN POLICIES OF THE SAN FRANCISCO COMPREHENSIVE PLAN AND THE PROPOSED PROJECT*

APPLICABLE URBAN DESIGN POLICIES	RELATIONSHIP OF PROJECT TO APPLICABLE POLICIES
A. Policies for City Pattern	
1. Policy 1 - "Recognize and protect major views in the City, with particular attention to those of open space and water." (p. 10)	The project is outside designated view corridors. It would interrupt few. if any, long-range views from neighboring structures, because any such potential views are already blocked by existing Hilton buildings or other intervening structures, or because the orientation and/or design of neighboring structures preclude such views (see Figures 24 and 25, pp. 77 and 78).
2. Policy 3 - "Recognize that buildings, when seen together, produce a total effect that characterizes the City and its districts." (p. 10)	The proposed tower would be of an intermediate height (320 ft.) between the existing Hilton Tower (480 ft.) and the older Hilton hotel structure (170 ft.). It would thus provide a visual transition among the existing buildings on the site. The proposed project would also help visually integrate the site by continuing the existing masonry base treatment completely around the project block and by repeating the use of the light-colored aluminum panelling used in the high-rise tower. The project, together with the existing Hilton structures, would be comparable in scale to other hotel projects currently being proposed for adjacent sites (see IV.A., p. 69); once completed, these projects collectively would increase the visual identity of the area as part of the principal hotel district of San Francisco.

3. Policy 6 - "Make centers of activity more prominent through design of street features and by other means." (p. 12)	At street level, the proposed project would provide for pedestrian interest primarily through the addition of the covered, recessed porte cochere and lobby as a center of activity on O'Farrell St., and through the installation of street trees along the Taylor and O Farrell St. frontages of the project site Additional street features, such as distinctive paving, lighting, street furniture, and additional landscaping are not now proposed. The continuation of the tan masonry treatment around the base structure would help visually integrate the Hilton complex.
4. Policy 8 - "Increase the visibility of major destination areas and other points for orientation." (p. 13)	The proposed project would be partially visible from a few distant vantage points, primarily to the south, west and north (see Figures 23, 24 and 25, pp. 76-78. Together with the similarly placed hotel projects proposed for adjacent sites, the project would increase the local visibility of the hotel group, although the existing Hilton Tower would remain its principal visual landmark.

B. Policies for Conservation

5. Policy 6 - "Respect the character of older development nearby in the design of new buildings." p. 25)	Although the proposed project would be generally consistent in size, scale and architectural treatment with existing development on the project block, it would represent a departure in style and scale from much of the older development surrounding the site, particularly the smaller-scaled buildings to the south and west (see Figures 24 and 25, pp. 77 and 78).

C. Policies for Major New Development

6. Policy 1 - "Promote harmony in the visual relationships and transitions between newer and older buildings." (p. 36)	See Items 2 and 5 above. According to the Urban Design Plan, the surfaces of large buildings should be articulated and textured to reduce their apparent size and reflect the pattern of neighboring older buildings. The base of the proposed project would be masonry, as are exteriors of several of the older buildings fronting the project site, but the project would afford little or no modeling, articulation, or textural relief on either its masonry base or its aluminum and glass upper units. The proposed project would have a fenestration pattern and facade coverings similar to those of the existing Tower, built in 1969, and would continue the facade lines established by the aluminum panels of the tower, and masonry base structure of the existing hotel and tower. During morning hours, the project would block penetration of sunlight to O'Farrell and Taylor Sts. (see IV.B., p. 83).

7. Policy 2 - "Avoid extreme contrasts in color, shape, and other characteristics which will cause new buildings to stand out in excess of their public importance." (p. 36)	See Item 6. above. The Tower No. 2 would be basically rectilinear in shape. The glazing and the light, neutral-colored aluminum exterior materials would be similar in color and geometric form to the existing Hilton Tower and would impart generally light color values to the upper levels of the proposed tower. These values would shift, depending on time of day, natural lighting conditions, and reflected sky colors.
8. Policy 4 - "Promote building forms that will respect and improve the integrity of open spaces and other public areas." (p. 36)	The proposed project would provide no public open space. No parks or plazas would be affected by shadows cast by the project. The project would increase shadow effects on O'Farrell and Taylor Sts. (see IV.B., p. 83).
9. Policy 5 - "Relate the heights of buildings to important attributes of the City pattern and to the height and character of existing development."(p. 36)	See Item 2, above. The height of the proposed project would conform to the present height limit at the site. The tower would be comparable in scale to other hotel projects in the vicinity, and would be intermediate in height between the existing Hilton structures on the site. The project would be generally taller than neighboring low-rise and mid-rise development to the immediate south, west and north.
10. Policy 6 - "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction."(p. 37)	See Item 9, above. As stated elsewhere, the building would provide a transition between the 480-ft. tower and the 170-ft. building of the Hilton Hotel. It would stand in a similar relationship to tourist hotels such as the Californian and Clift to the northwest and north, and to the lower residential hotels of the Tenderloin.

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*City and County of San Francisco, 1971, Comprehensive Plan, Urban Design Element. Page references are shown in parentheses. Policies for Neighborhood Environment are intended to apply to residential areas of the City and are not discussed in this table.

low elevation of this area, the proposed structures would generally be seen against a backdrop of higher topography or taller Downtown structures, and would not intrude into the City skyline.

LIGHT AND SHADOW EFFECTS

During early morning hours in the fall, winter and spring months, the project would cast shadows on the Taylor St. and O'Farrell St. sidewalks to the west and north of the site (see Figure 26). Similar shadows are already caused by existing structures. On summer mornings, new shadows would be thrown on Taylor St. and buildings west of the site, while O'Farrell St. would remain in sunlight.

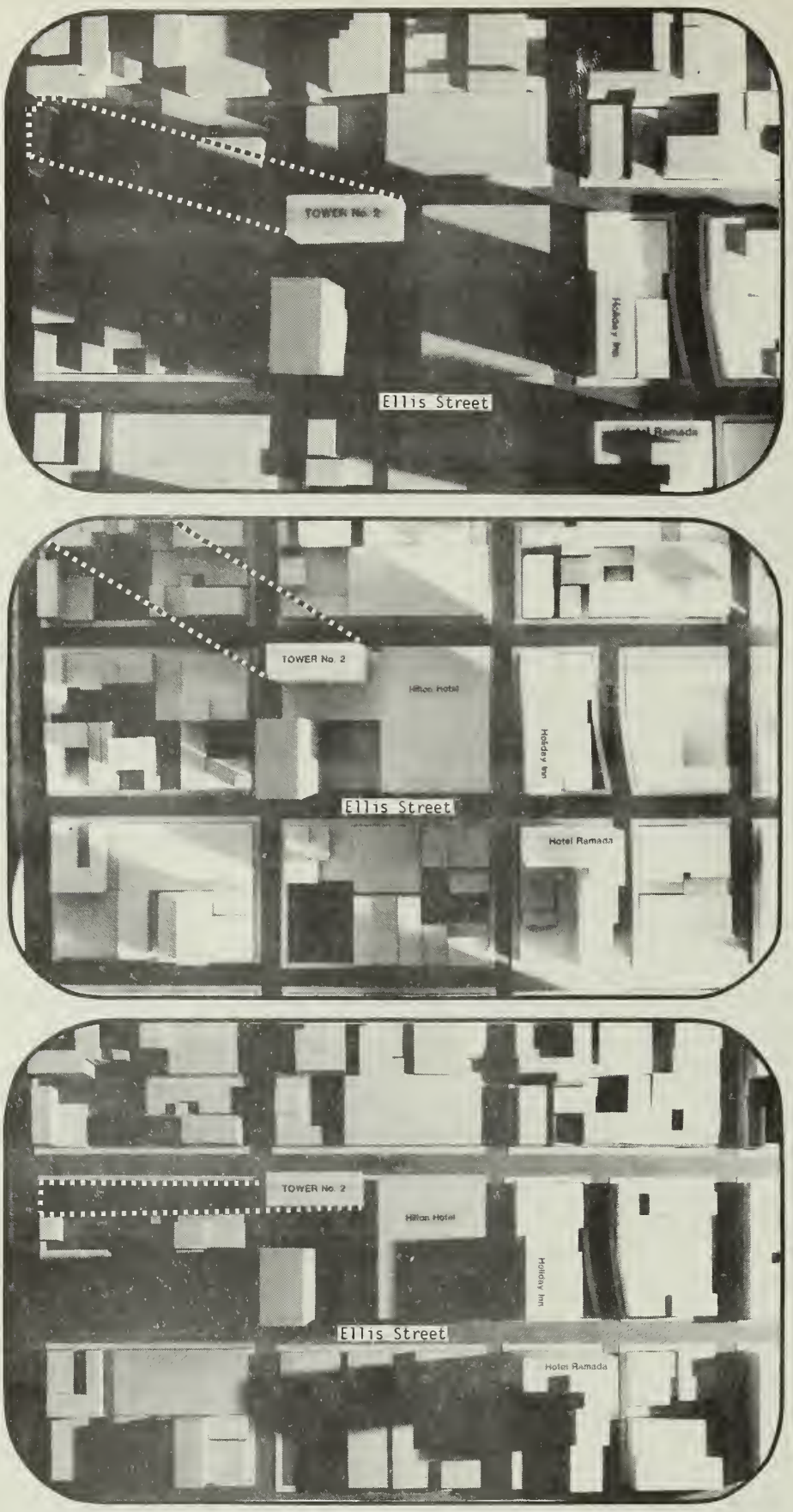
From mid-morning to mid-afternoon in the spring and fall months, shadows would be cast on O'Farrell St. and buildings north of the site. Narrower shadows are currently cast on O'Farrell by the existing Hilton Tower south of the project (see Figure 27, p. 85). During the winter, the project would cast mid-day shadows more easterly of shadows cast by the existing Hilton Tower.

The project tower would cast afternoon shadows on O'Farrell St. and Mason St. during fall, winter and spring months, and would cast afternoon shadows on Mason St. south of O'Farrell St. and the proposed Holiday Inn on the east side of Mason St. (see Figure 28, p. 86).

During mornings in all seasons, the proposed tennis courts above the ballroom level would be shaded by the existing Hilton Hotel and Tower. During midday hours, the westerly portion of this area would be shaded by the existing Hilton Tower. The tennis court would be relatively unshaded during early afternoon hours during spring, summer and fall. The proposed Tower No. 2 would not shade any public parks or plazas at any time.

WIND EFFECTS

The changes the proposed building would make in wind directions and velocities at pedestrian level have been studied by the use of models in a wind tunnel to



Project Shadow

FIGURE 26: PROJECTED SHADOW PATTERNS AT 8 A.M. (STANDARD TIME)

Mid-March &

Mid-September

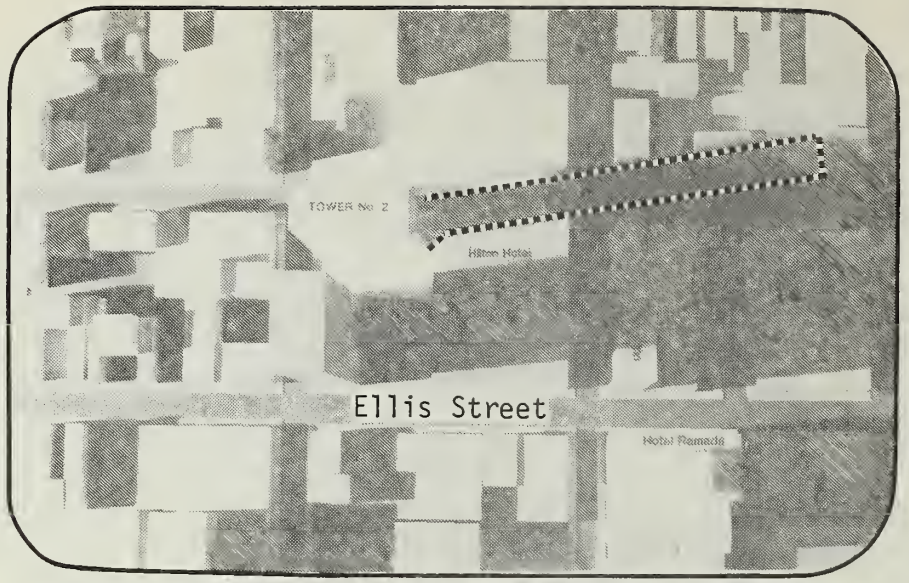
Mid-December

Mid-June

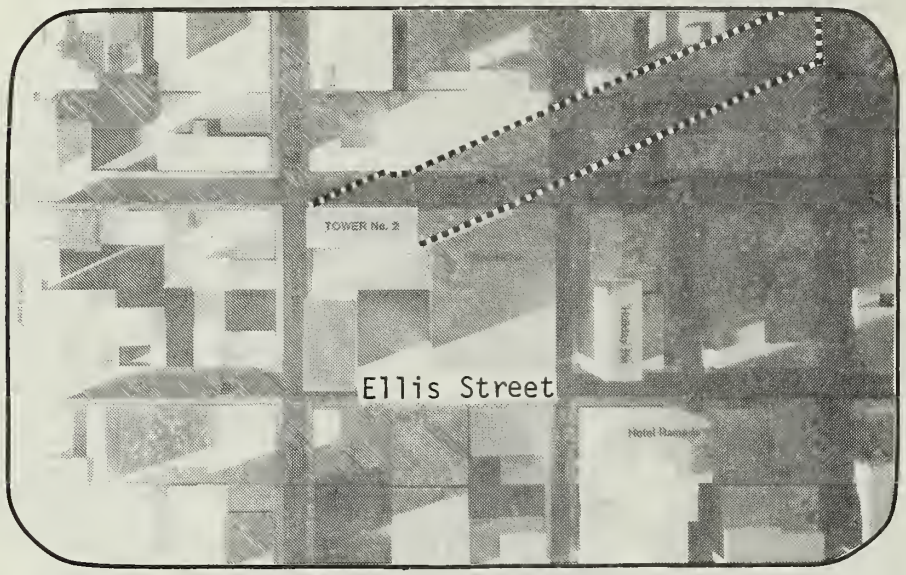
N

Project Shadow

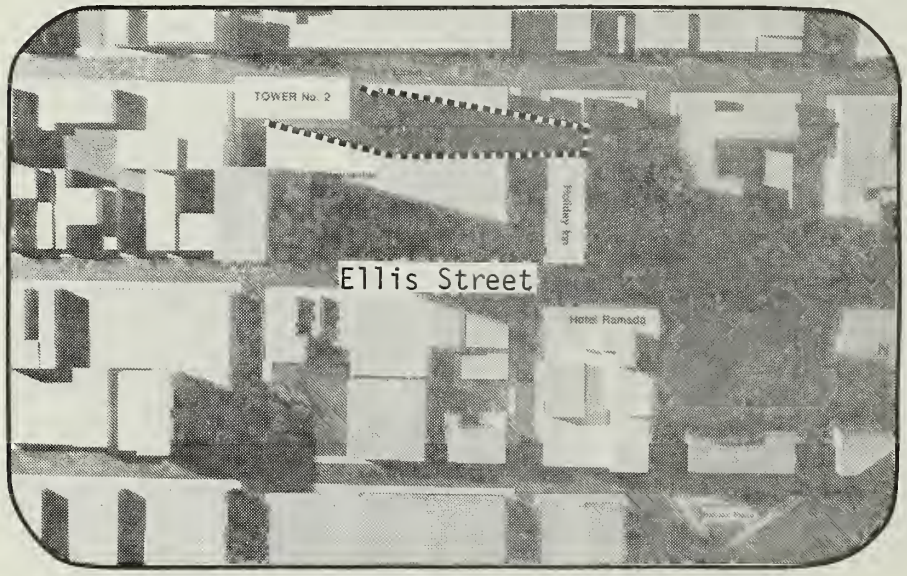
FIGURE 27: PROJECTED SHADOW PATTERNS AT 12:00 NOON (STANDARD TIME)



Mid-March &
Mid-September



Mid-December



Mid-June

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Project Shadow

FIGURE 28: PROJECTED SHADOW PATTERNS AT 4 P.M. (STANDARD TIME)

simulate natural winds near the ground (see Appendix C, p. 193, for the text of the study). Tests were conducted for northwest and west winds, the most common wind conditions in San Francisco. Wind speeds at pedestrian levels were evaluated as a percentage of the wind speed measured by the U.S. Weather Service at the top of the Federal Building at 50 Fulton St. at United Nations Plaza, about one-half mile southwest of the site; this is the nearest wind reference point. This percentage is a measure of the ratio of the wind speed at pedestrian level to the wind speed measured at the top of the Federal Building. The resulting percentage, or wind speed ratio, would remain relatively constant for calm or windy conditions. Thus, a point having a "very high" wind speed ratio would still experience light winds on a near-calm day (light-wind). Likewise, a point found to have a "low" wind speed ratio could experience high winds on a windy day, but not nearly as high as at the wind reference location.

For northwest winds, existing ratios range from light to moderate near the site. High wind-speed ratios occur at the east side of the intersection of O'Farrell and Mason Sts. and the north side of the intersection of Ellis and Taylor Sts. Wind direction is variable over most of the area studied due to the disturbing effect of existing buildings.

For west winds, low to moderate wind speed ratios occur along O'Farrell St. Moderately high to high wind speed ratios generated by the existing Hilton Tower affected Taylor St., Ellis St., and the intersection of Ellis and Taylor Sts. Elsewhere, wind speed ratios are light to moderate. Wind flows were again disturbed, particularly near the existing Hilton Tower.

During northwesterly winds, the project would increase wind speed ratios by less than 10% along O'Farrell St. near the site. A mixed pattern of wind increases and decreases would occur at the intersection of O'Farrell and Mason Sts. It appears that the proposed tower would shift some winds generated by the existing Hilton Tower to rooftop levels, as winds would be diminished along Taylor St. and at the intersection of Ellis and Taylor Sts. While the wind speed ratios at this intersection would be reduced by 5% to 20%, the ratios would still be moderately high to high. Wind speed ratios at the east side of the Ellis St. and Mason St. intersection would increase from

moderately low to moderate. The proposed rooftop tennis courts south of the project tower would experience moderately high wind-speed ratios. The porte cochere on O'Farrell St. would experience low wind-speed ratios with some turbulence.

Under westerly wind conditions, the project would increase some wind speed ratios along O'Farrell St. by 5% to 20%, but ratios there would remain in the low to moderately low range. The effect would not extend as far as the O'Farrell St. and Mason St. intersection. Diversion of wind by the proposed tower would cause decreases in windspeed ratios along both Taylor and Mason Sts. between O'Farrell and Ellis Sts.from moderately high to moderate ratios. Wind speed ratios along Ellis St. would remian generally unchanged. The rooftop tennis courts would have high wind speed ratios, while the proposed porte cochere would have low wind speed ratios.

C. CULTURAL AND HISTORIC ASPECTS

As no buildings are known to have existed on the site with basements deeper than that of the demolished Downtown Airlines Bus Terminal (14 to 18 ft. deep) which fully covered the site, and the basement for the proposed Hilton Tower No. 2 would extend from 12 to 14 ft. beneath natural grade, it is not anticipated that any artifacts of historic value would be found during excavation on the site.

D. COMMUNITY SERVICES AND UTILITIES

Police. An increase in robbery, burglary and petty theft incidents would probably occur after project completion due to an increase in the number of people on the site. No additional parking is planned, but greater use of existing parking facilities by guests of the proposed Tower No. 2 is probable, and auto-related thefts due to the project could increase. The Police Department does not anticipate a need for additional personnel or equipment to serve the proposed project./1/ Security provisions in the proposed Tower No. 2 would be similar to those used in the existing hotel, including mobile

and stationary security personnel and television monitors at selected points. Cumulative development in San Francisco would eventually increase the demand for police services because of the resulting additional population, property and traffic. However, because most new developments incorporate security systems and personnel in their plans, they typically require fewer public police services than do older, but similar, developments.

Fire. The water supply system in the vicinity of the site would be adequate for firefighting purposes. The San Francisco Fire Department would not require additional personnel or equipment to serve the project and proposed Holiday Inn and Hotel Ramada./2/

Fire safety features of the proposed project would conform to the San Francisco Building Code, and would include sprinkler and alarm systems./3/ Life safety code requirements for fire protection, as designed by the State and adopted as part of the San Francisco Building Code, reduce the cumulative impact of newer developments on Fire Department services. So long as the protection systems are properly installed and maintained, they generally confine fires to the area where they start, extinguish the fires quickly, and provide adequate forewarning to enable building occupants to reach safety. According to the San Francisco Fire Department, newer high-rise buildings present a lesser fire hazard than low-rise buildings because of life safety code requirements. Once a fire begins in a high-rise, however, it typically requires more manpower to fight. In such a case, additional personnel and equipment are brought in from neighboring stations without requiring permanent additional personnel or equipment in the immediate vicinity of the project./4/

Water. During the 24 months of construction, an estimated 3,000 gallons per day (gpd) of water would be used at the site./5/ When completed, the proposed Tower No. 2 would have an average water use of about 71,000 gpd./6/

Cumulative water demand by all three proposed hotel developments in the area (the Hilton Tower No. 2, the Hotel Ramada and the Holiday Inn), would average about 410,000 gpd or 0.5% of the current average daily water use in San Francisco. Existing mains have sufficient capacity to supply this amount./7/

Wastewater. No dewatering of the site is expected to be necessary during construction. The proposed development would generate an estimated 67,000 gpd of dry-weather sewage flows during operation./6/ Overflows of untreated sewage and storm flows into the Bay (and ocean) will continue to occur until expansion plans are implemented. These overflows are due to the design of the system, which combines sewage flows with stormwater runoff, rather than to specific developments in San Francisco.

Cumulative wastewater generation from the three proposed hotel developments would average about 390,000 gpd, or 0.8% of the current average daily dry-weather flows to the North Point Plant. This will represent 0.5% of the capacity of the Southeast Treatment Plant when it goes into interim operation in 1982. Present flows to the North Point Plant will be directed to the Southeast Plant at that time. No expansion of the present collection and treatment system would be necessary to serve the project and proposed hotels./8/

Solid Waste. During project construction, 16,000 cubic yards of excavated materials would be removed from the site. The probable disposal site would be near Candlestick Park in southeastern San Francisco./5/ When completed, the proposed Tower No. 2 would generate less than one ton of solid waste per day./9/ After compaction, this would be expected to fill the remaining five cubic yards of excess capacity in the Hilton Hotel's present compaction facilities. No change would be required in present daily collection service and Golden Gate Disposal Company anticipates no problems with collection or disposal for the proposed project and two other hotel developments./10/

Cumulative solid waste generation from the three proposed hotel developments would be approximately 4.5 tons per day or about 0.5% of the Golden Gate Disposal Company's present daily collection.

Telephone. It is not yet known if telephone service to the proposed Tower No. 2 would be provided by connection to the existing internally owned central switchboard system or if additional outside service by Pacific Telephone and Telegraph would be required. Capacity exists for about 100 additional outside

lines, and no street work would be required for installation of up to that number of lines./11/

NOTES - Community Services and Utilities

/1/ J. P. Shannon, Deputy Chief of Police, Administration, San Francisco Police Department, letter communication, 12 February 1980. This letter is available for public review at the Department of City Planning, Office of Environmental Review.

/2/ Chief R. E. Rose, Division of Planning and Research, San Francisco Fire Department, letter communication, 26 February 1980. This letter is available for public review at the Department of City Planning, Office of Environmental Review.

/3/ D. Schaefer, Architect, John Carl Warnecke & Associates, telephone communication, 1 March 1980.

/4/ Chief R. E. Rose, Division of Planning and Research, San Francisco Fire Department, telephone communication, 10 March 1980.

/5/ J. E. Cahill, President, Cahill Construction Company, letter communication, 31 January 1980.

/6/ Water use calculations are based on an assumed daily demand of 200 gallons per room, with an average occupancy rate of 87% for worst-case analysts. This figure includes water use by hotel restaurant and laundry facilities. The figure was derived from water use at the existing Hilton Hotel and Tower. This amounts to a worst-case assumption, as the new Tower No. 2 would have water-conserving fixtures which the older portions of the Hotel do not have. Wastewater generation is assumed to be 95% of water consumption, to allow for water loss due to evaporation, landscape watering, etc.

/7/ J. E. Kenck, Manager, City Distribution Division, San Francisco Water Department, letter communication, 14 February 1980. This letter is available for public review at the Department of City Planning, Office of Environmental Review.

/8/ M. Francies, Engineering Associate II, Sewer Investigation, Engineering Department, San Francisco Wastewater Program. This letter is available for public review at the Department of City Planning, Office of Environmental Review.

/9/ Based on solid waste generation by the existing Hilton Hotel, as reported by G. Cope, Chief Engineer, Hilton Hotel, and F. Garbarino, Office Manager, Golden Gate Disposal Company, telephone communications, 5 February 1980. The amount is equal to about 4.5 lbs of solid waste per day per room with an averag occupancy rate of 87%.

/10/ F. Garbarino, Office Manager, Golden Gate Disposal Company, telephone communication, 5 February 1980.

/11/ D. Heinkel, Engineer, Pacific Telephone and Telegraph Company, telephone communication, 31 January 1980.

E. ECONOMIC, EMPLOYMENT AND FISCAL ASPECTS

ECONOMIC AND EMPLOYMENT ASPECTS

Hotel Space and Occupancy. The proposed Hilton Tower No. 2 would add about 410 guest rooms to the existing 1,700 rooms in the Hilton Hotel and Tower for a total of about 2,110 rooms. No new retail facilities are planned for Tower No. 2 except for a newsstand in the Grand Lobby. It is possible that a few small shops (barber, flower, health spa) may be moved from elsewhere in the hotel to the tennis court level at some future date; however, this is not part of the present proposal. The existing 360-seat Gazebo Coffee Shop would be expanded by an additional 160 seats on the eastern side of the Grand Lobby.

Taken alone, the existing annual average Hilton Hotel occupancy rate of above 85% would not be expected to decrease below about 83% as a result of the increase in rooms. With the proposed addition of guest rooms and public meeting space, the Hilton Hotel would be able to attract convention business that is currently being lost by the Hotel because it does not have as much public meeting space as is desired. If the three hotel projects proposed for the area (see Figure 22, p. 70), were built at the same time (concurrently adding about 2,400 rooms), occupancy rates at the Hilton Hotel would still not be expected to drop to below 80%, primarily because the George R. Moscone Convention Center, due to open in October 1981 and located about 1/2 mile southeast of the project site, is expected to increase room demand at the Hilton (see cumulative hotel development discussion, p. 100).

Short-Term Construction Employment. Total construction payroll (including fringe benefits) for the proposed Hilton Tower No. 2 is estimated to be about $4.6 million, or 135 person years of construction labor./1/ An average of approximately 68 full-time jobs would exist at any one time during the two-year construction period. An estimated 40% or about 27 of these jobs would be held by San Francisco residents./2/ Construction workers would be

expected to spend a portion of their wages for goods and services in the San Francisco Bay region, resulting in secondary employment effects. An estimated 68 secondary full-time one-year jobs would be created in the region each year during the two-year construction period./3/

Permanent Employment./4/ Projected employment attributable to the proposed Tower would total about 150 persons. Table 13 shows a breakdown of projected new employees by type of job. No additional "casual or extra" food service employees would be hired. Because many hotel jobs provide employment for low- to moderate-income persons and minorities, most of the employment provided by the proposed project would be expected to be held by persons who are currently San Francisco residents. Therefore, based on the place of residency of existing Hilton Hotel employees, an estimated 2/3 or about 100 of the new employees would be expected to be San Francisco residents. Also, according to employment data on existing Hilton employees, approximately 2/3 or 100 of the new Hilton employees would be expected to be minorities (Black, Asian or Hispanic). About 90% or 135 would be union members.

TABLE 13: PROJECTED NEW PERMANENT EMPLOYMENT BY CATEGORY AT THE SAN FRANCISCO HILTON HOTEL

	Current Employees	Projected Increase in Employees *	Total Hilton Employment
Management/Professional	40	5	45
Maintenance (includes bellpersons)	95	25	120
Food and Beverage (includes stewards)	325	50	375
Security	20	5	25
Housekeeping (includes laundry)	235	50	285
Front Desk	60	5	65
Clerical	125	10	135
TOTAL	900	150	1,050

*These projected increases in employment would be due to the proposed Tower No. 2.

SOURCE: San Francisco Hilton Hotel

The majority of these permanent jobs, particularly the housekeeping and maintenance jobs, would represent a net increase in employment of San Francisco Bay Area residents, as these jobs can be expected to be held by workers now living in the Bay Area rather than by existing Hilton employees who would be transferred from outside of the Bay Area.

Secondary Economic Effects. Secondary employment and income effects would result through the multiplier effect from expenditures made by guests at the Hilton Hotel . As hotel guests make purchases in retail stores and restaurants and for entertainment and other tourist expenditures, their purchases become income to those who sell goods and services. This income, in turn, creates secondary income and employment opportunities resulting in increased sales and business tax revenues generated to the City, additional jobs and income for San Francisco and other Bay Area residents, and an overall increase in economic activity in the San Francisco Bay Area.

The San Francisco Convention and Visitors Bureau provides estimates of hotel guest expenditures at San Francisco establishments. Based on the most recent estimates (1979) of the Bureau, the combined (convention and non-convention) expenditures made by hotel guests at San Francisco establishments outside of the Hilton Hotel facilities would be about $60 (in 1979 dollars) for each night a visitor spent in San Francisco./5/ Based on an 80% occupancy rate, the Hilton Hotel would have an estimated 1.1 million total visitor nights per year after completion of the 410-room addition, resulting in annual expenditures of about $66 million in San Francisco by Hilton Hotel guests. About $12.8 million of these expenditures would be attributable to the estimated 213,500 additional room nights available at the Hilton Tower No. 2. This is about a 27% increase over expenditures by guests staying at the existing Hilton. According to the Convention and Visitors Bureau, those expenditures would be distributed as shown in Table 14.

Visitor expenditures in San Francisco are an important factor in the City's economy because the majority of tourists, commercial travelers and convention delegates are from outside the City and are spending "new money" which originates from outside of the Bay Area. This new money would be income

TABLE 14: ANNUAL EXPENDITURES* MADE BY HILTON HOTEL GUESTS AT SAN FRANCISCO ESTABLISHMENTS, BY CATEGORY MILLIONS OF DOLLARS (1980 CONSTANT DOLLARS)

Expenditures	Existing Hilton Hotel & Tower (1700 Rooms)	Proposed Hilton Tower No. 2 (410 Rooms)	Total Estimated Dollar Amount Spent	Percent of Total Spending
Restaurant Meals	$17.4	$ 4.2	21.6	32.7
Retail Sales	13.0	3.1	16.1	24.4
Entertainment	7.8	1.9	9.7	14.7
Local Transportation	3.6	0.9	4.5	6.8
Sightseeing	2.2	0.5	2.7	4.1
Auto: Oil, Gas	3.0	0.7	3.7	5.6
Other Items	6.2	1.5	7.7	11.7
TOTAL	$53.2	$12.8	$66.0	100.0

*Does not include money spent at the Hilton Hotel for room accomodations and food and beverages.

SOURCE: San Francisco Convention and Visitors Bureau and Environmental Science Associates

created in the City without subtracting income from other sectors of the San Francisco economy.

FISCAL ASPECTS

The proposed Hilton Tower No. 2 is expected to be a net fiscal benefit to the City and County of San Francisco, generating a total of between $679,000 and $741,000 to the City's General Fund in net annual property tax ($238,000 to $300,000), hotel room tax ($298,000), direct sales tax ($55,000), payroll expense tax ($17,000), and franchise tax ($71,000) revenues. Of these revenue sources, annual hotel room and sales tax revenues, representing 37% to 41% of total revenues, are particularly important because unlike property taxes, these revenues are not limited to a 2% per year increase under Proposition 13 and would increase proportionately to City costs.

Assessed Valuation and Property Taxes. Based on preliminary replacement cost estimates, the fair market value of the proposed 410-room Hilton Tower No. 2 (including land) would be about $30 million (in 1980 dollars). The proposed Hilton Tower No. 2 would have an estimated $7.5 million assessed value and would generate between $300,000 and $373,000 in total property tax revenues annually./6/ The project would increase the San Francisco property tax base by $7.1 million ($7.5 million less the $412,500 assessed valuation of the existing land at the project site). Assuming property tax distribution is similar to this fiscal year, total property tax revenues accruing to the City and County from the proposed Hilton Tower No. 2 would be between $255,000 and $317,000, with a net increase over existing property tax revenues ($17,400) from the project site to the City and County of between $238,000 and $300,000.

Hotel Room Tax. The Hotel Room Tax Surcharge Ordinance (Proposition O) which was approved by the voters in the June 1980 election, increased the hotel tax rate from 8.0% to 9.75%, with the additional 1.75% surcharge allocated directly to the City's General Fund. Based on this new hotel tax rate of 9.75% of total room sales and an 80% occupancy rate, the Hilton Hotel would generate $3.4 million of total hotel tax revenues annually after project completion. Of this amount, an estimated $882,000 of additional revenues would be attributable to the new 410-room Tower No. 2, representing about a

25% increase over revenues from the existing Hilton. In accordance with the amended City Ordinance 251-78, approximately $362,000 (41%) of the additional hotel room tax revenues would be allocated for the construction of the George R. Moscone Convention Center; $45,000 (5.10%) for Candlestick Park Bond debts and $45,000 (5.10%) for financing low-income housing in the Yerba Buena Redevelopment Area. If the remaining amount were to be allocated similarly in the 1979/80 fiscal year, about $132,000 (15.0%) would be budgeted for the Hotel Publicity and Advertising Fund and about $298,000 (33.8%) would accrue to the City's General Fund.

The $882,200 of (additional) hotel room tax revenue resulting from occupancy of the new Tower No. 2 would be net or incremental revenues, as the Tower No. 2 would not displace any existing hotel rooms and would provide 410 new taxable hotel rooms in San Francisco.

Other Revenue Sources. Increased food and beverage sales at the Hilton Tower No. 2 would generate an additional $288,000 of sales tax revenues over existing sales tax revenue from the Hilton Hotel and Tower ($644,000). From these additional revenues, the City and County would receive an estimated $55,000 in direct sales tax revenue and BART would receive $23,000.

Total expenditures ($66 million) by Hilton Hotel guests at San Francisco retail establishments, restaurants, theaters and for other tourist purchases would generate an estimated $671,000 million in indirect sales tax revenues to the City and County and $283,800 to BART (see Table 14, p. 95)./7/ Of these indirect sales tax revenues, the proposed Hilton Tower No. 2 would contribute about $127,000 to the City and County and $54,000 to BART.

After project completion, the Tower No. 2 would generate about $17,000 of additional estimated payroll expense tax and $71,000 of additional franchise tax revenues from the Hotel. If the legality of the passage of Proposition Q is resolved and the Proposition held to be in effect, then an additional $41,000 of payroll expense tax revenues to the City's General Fund would be generated by the existing Hilton Hotel and Tower ($36,000) and the proposed Tower ($5,000).

To the extent that the proposed addition of 410 hotel rooms to existing San Francisco hotel room stock does not decrease demand for other existing hotel rooms, the projected increased direct sales, payroll and franchise taxes resulting from the Hilton Tower No. 2 would be net revenues to the City and County.

Costs and Net Revenues. The San Francisco Police and Fire Departments indicate that they would not incur additional operating and capital costs to serve the project. A slight increase in general government administrative costs would be expected with the increased intensity of uses on the project block. Street-related costs, such as those for maintenance, storm drainage. lighting, and cleaning, would not be measurably affected./8/ Water and sewer operating cost increases would be covered by user charges, and the Water Department and Department of Public Works indicate that no additional project-related water or sewer capital costs would be required. The project would not increase the capital costs for the upgraded sewer system currently under construction by the City's Clean Water Program because that system is being sized for wet-weather flows which exceed dry-weather flow requirements by factors of 10 or more./9/

Muni and BART would incur increased costs to provide public transit for new employees and additional guests at the Hilton Tower No. 2. Muni currently estimates a system wide per-paid-passenger fare deficit of about $0.45 (after the approved fare increase to $0.50)./9/ About 40% of this fare deficit is made up by City ad valorem taxes including property, payroll and franchise taxes. The remaining deficit is made up from local, state and federal funding.

Muni does not anticipate a decrease in this deficit in the near future because planned improvements such as the Muni Metro system will increase future costs in proportion to increased passenger ridership. Muni does expect, however, that the portion of the fare deficit covered by local, state and federal funding will increase. thereby decreasing the portion of the deficit borne by San Francisco property taxpayers./10/

New employees at the Hilton Hotel Tower No. 2 would generate an estimated 120 daily trips on the Muni and additional guests at the Hilton Tower No. 2 would

generate about 150 daily trips for a total of 270 daily trips. Assuming for worst-case analysis that the new employees and hotel guests would ride Muni seven days a week, these 270 total daily trips would result in a $44,000 annual Muni operating deficit. Additional project-generated revenues would accrue to the City's General Fund from which Muni receives part of its annual operating budget. The projected $679,000 to $741,000 of total annual property, hotel room, sales (direct), payroll and franchise tax revenues generated from the Hilton Tower No. 2 to the City's General Fund are expected to cover the Muni fare deficit attributable to the proposed Tower No. 2.

An estimated 90 trips daily would be generated on BART by Hilton Tower No. 2 employees (50 trips) and guests (40 trips). At the existing average annual operating deficit per trip of $1.25/11/, these 90 trips would result in an annual operating deficit of about $41,000. The BART deficit is made up primarily from the 1/2% BART sales tax./12/ The estimated $77,000 of direct and indirect sales tax revenues to BART generated from the proposed Tower No. 2 would exceed the estimated annual operating deficit attributable to the project.

Total additional direct annual revenues ($679,000 to 741,000) that would be generated from the proposed Hilton Tower No. 2 to the City and County from property taxes ($238,000 to $300,000) hotel room taxes ($298,000 accruing to General Fund), sales taxes ($55,000), payroll expense taxes ($17,000), franchise taxes ($71,000), and user fees would be expected to cover incremental (marginal) costs (including Muni costs) of public services for the project site. The Hilton Hotel Tower No. 2 can be expected to be a net fiscal benefit to the City and County, particularly because of its hotel room tax and sales tax contributions.

Under Proposition 13, unless property is sold and reappraised, annual increases in per-parcel property taxes are limited to 2%. In the long run, as public costs continue to rise and per-parcel property taxes are limited to a 2% per year increase, property tax revenues may not be able to cover public costs to serve new developments. Unlike other commercial and office development, whose primary source of ongoing public revenue is property taxes, approximately 46% to 50% of the revenues generated to the City and County from

the Hilton Tower No. 2 would be from hotel room and direct sales taxes whose dollar growth is not limited by statute.

CUMULATIVE HOTEL DEVELOPMENT EFFECTS

Projected Room Stock, Rates and Occupancy. In addition to the proposed 410-room Hilton Tower No 2, about 2,200 additional quality hotel rooms are to be proposed for construction in downtown San Francisco. These proposed projects include the 1000-room Hotel Ramada, to be located at the corner of Mason and Ellis Sts.; the 1,000-room Holiday Inn, to be located at Mason and O'Farrell Sts.; and the 220-room addition to the existing Holiday Inn - Civic Center, located on 8th St. between Mission and Market Sts./13/ Total estimated additional rooms (2,600), including the project, would represent about a 18% increase in total quality hotel rooms in the downtown area and about a 27% increase in the Union Square hotel district (not including the Holiday Inn - Civic Center addition).

In addition to the four projects to be proposed for construction in the downtown area, an additional 2,500 to 2,800 rooms, proposed for three major hotel facilities, are in the informal planning stages: a 600-room addition to the existing Sheraton Palace Hotel located on Market between New Montgomery and Second Sts.; a 700-room hotel to be near Market St. on Third St. north of the George R. Moscone Convention Center; and a second hotel (1,200 to 1,500 rooms) to be located in the Yerba Buena Center/14/.

Hotel Room Absorption and Demand. According to the San Francisco Convention and Visitors Bureau, there would be sufficient hotel room demand to absorb the estimated 5,100 to 5,400 hotel rooms currently proposed or being planned. This hotel room demand would come from the following sources/14/:

- George R. Moscone Convention Center. An estimated additional 2700-3500 rooms would be required by 1982 to meet the increased hotel room demand generated by the George R. Moscone Convention Center.

- Increase in Foreign Tourists. Foreign tourists currently comprise about 25% of all San Francisco tourists. Foreign tourism is expected

to increase, both in number and percentage of total tourism, because of the increased strength of foreign currency relative to the American dollar.

Recapture of Lost Business. Construction of an estimated 5,100 to 5,400 new hotel rooms is expected to recapture hotel business currently being lost because not enough hotel rooms are available in San Francisco. The insufficient hotel room supply, leads tourists, commercial travelers and convention participants, who would prefer to stay at San Francisco hotels, to choose either not to come to San Francisco or to stay at hotels located outside of but near San Francisco, such as at the San Francisco International Airport, in Burlingame or Oakland.

With the completion of the proposed five hotel projects containing about 3,300 hotel rooms, the annual area-wide occupancy rate is expected to range from abut 84% in 1981-2 to 77% by 1985. This decline in occupancy would be attributable to increased room supply, not entirely compensated by the recapture of lost business./15/ Room rates are expected to increase by 10% per year (as compared to 12% per year prior to 1982) because of the increase in the number of hotel rooms. Should the estimated 1,800 to 2,100 rooms currently in the informal planning stages be added to the existing and formally proposed hotel room stock, then occupancy rates could drop below 77%. Conversely, should fewer of these rooms be constructed, then occupancy rates could increase to above 80%. If even more hotel rooms were to be added to the San Francisco hotel room stock after 1985, hotel occupancy rates and increases in room rates would be expected to decline further if there were not a corresponding increase in hotel room demand.

Effects on the San Francisco Tourist Industry. New hotel construction in the downtown area would strengthen the tourist industry in San Francisco, especially for the convention tourist market. Construction of up to 5,400 quality hotel rooms, coupled with the opening of the George R. Moscone Convention Center, is expected to increase the number of convention participants visiting San Francisco. The convention visitors make a substantial contribution to San Francisco income. According to 1979 estimates

provided by the San Francisco Convention and Visitors Bureau, convention participants spent 233% more per capita ($772) than per capita expenditures ($232) by other tourist or commercial travelers visiting San Francisco. These per-capita estimates are for all tourist expenditures in San Francisco, including hotel room and food and beverage sales. An increased ratio of convention-tourist business to other tourist business in San Francisco could be expected to generate higher tourist income to the City and County.

Cumulative Hotel Tax Contributions. Based on an 80% occupancy rate and an average daily room rate of about $50, the proposed Hilton Tower No. 2, Hotel Ramada, Holiday Inn, and the Holiday Inn Civic Center addition would generate an estimated $3.7 million of additional hotel room tax revenue at the new rate of 9.75% of gross room rental sales. This amount would represent about 11% of the projected total hotel tax revenue of $32.7 million to be collected in Fiscal Year 1982-83./15/

Indirect Economic Effects on Tenderloin Residential Hotels. Construction of the proposed Hilton Tower No. 2, Hotel Ramada, and Holiday Inn would extend major hotel development in the Union Square downtown hotel district farther into the Tenderloin neighborhood of San Francisco. Although none of these projects would displace any residences or residential hotels, their construction could indirectly encourage conversion of residential hotels near them to tourist hotels. The extent of this effect will depend, in part, on whether any permanent measures are undertaken to control residential hotel conversion after the hotel conversion moratorium expires in November 1980.

Should the moratorium be removed in November, without any permanent control measure to replace it, residential hotel conversion could be expected to continue. One of the primary reasons for such conversion is that with the current high demand for tourist hotel rooms in San Francisco, hotel owners are able to increase their incomes by providing tourist (transient) hotel rooms that rent by the day instead of residential hotel rooms that rent by the week or month./16/

Cumulatively, major hotel construction in the area would indirectly stimulate residential hotel conversion by improving the image of the Tenderloin,

increasing the security of the Tenderloin and increasing property values in the area./16/ Increased property values and the increased number of tourists in the Tenderloin area would be expected to upgrade existing retail uses and stimulate additional tourist-oriented retail use. The improved image, increased safety and security, and the increase in tourist-oriented commerial uses would increase the economic justification for smaller residential hotels to convert to tourist hotels because the eastern Tenderloin would become more attractive to tourists.

Even though construction of the Hilton Tower No. 2, Hotel Ramada and Holiday Inn would increase the total room supply in the downtown area, their construction would not necessarily slow the rate of residential hotel conversion. In the short run major hotel development could further stimulate conversion because tourists who could not afford the $50+ room rates at the Hilton Tower No. 2, Hotel Ramada, and Holiday Inn, would be willing to stay in smaller, less expensive hotels, especially if these smaller hotels are in the vicinity of these larger hotels and are able to share in the facilities of the major hotels, such as restaurants and specialty shops. Increased residential hotel conversion would reduce the low-income housing stock in San Francisco, and would diminish the ability of the low-income and elderly residents to find affordable housing in San Francisco. Rising land values could result in increased rents and the replacement of some low-cost housing with more profitable tourist-oriented uses. In the long-run, a decrease in hotel room demand would reduce the pressure for residential hotel conversions. If a permanent ordinance is adopted to control the conversion of residential hotels, some upgrading and increase in the number of retail stores in the Tenderloin could still be expected as well as increased pressure on property values.

NOTES - Economic, Employment and Fiscal Aspects

/1/ J.E. Cahill, President, Cahill Construction Company, letter communication, 31 January 1980.

/2/ J.E. Cahill, President, Cahill Construction Company, telephone communication, 21 March 1980.

/3/ An employment multiplier is a quantitative expression of the extent to which a change in local production induces an overall change in employment.

The construction multiplier as stated in this report means that, for each person employed as a result of project construction, additional regional employment opportunities would be generated by his or her demand for goods and services. As persons tend to spend their incomes in the San Francisco Bay Area, their purchases become income to those who sell goods and services. These sellers, in turn, spend a portion of their income on their own purchases, and so on. The resulting increase in the level of economic activity provides additional jobs. Two construction employment multipliers, 2.0 and 1.9, have been used for major construction in downtown San Francisco. The 2.0 construction employment multiplier is contained in:

> City and County of San Francisco, Department of City Planning, Final Environmental Impact Report: Yerba Buena Center, EE 77.220, 6 January 1978, Appendix D., Economics, p. 40cc., and:

the 1.9 construction employment multiplier is contained in:

> City and County of San Francisco, Department of City Planning, Final Environmental Impact Report: Bank of Tokyo of California Building, EE 74.170, 1975, p. 41.

These multipliers should be considered as rough indicators of the number of secondary jobs that could result from project construction employment.

/4/ J. Donlin, Personnel Manager, San Francisco Hilton Hotel, telephone communication, 4 March 1980.

/5/ A visitor night is counted as each night a visitor occupies a room, taking double occupancy into account. Per visitor night expenditures were derived from: San Francisco Convention and Visitors Bureau June 1980, 1979 Annual Report, 1979 Statistical Summary, p. 11; and D. Wassenaar, Ph.D. Institute for Business and Economic Research, San Jose State University, telephone communication 18 April 1980.

/6/ Appreciation of land value and escalation of construction costs are expected before fiscal year 1982; however, estimates are given in constant dollars. Both the low and the high tax estimates assume the existing tax structure and appraisal of market value based on replacement costs. The low estimate is based on a tax rate of $4 per $100 assessed value and assumes that all existing San Francisco bond debt is retired. Any new bond repayment would be included in the $4 tax rate, which is the maximum composite tax rate allowed under Proposition 13. The high estimate is based on a tax rate of $4.97, which is the $4.00 maximum composite tax rate plus the 97¢ tax rate for previously approved San Francisco bond debt. The current 97¢ bond tax rate is not expected to be retired until the year 2020 (J. Porter, Chief Accountant, Controller's Office, City and County of San Francisco, telephone communication 17 April 1980).

/7/ Indirect sales tax revenue would accrue to the City from only part of total tourist expenditures since the tax does not apply to services or sale of certain merchandise, in particular: food for human consumption except meals furnished by restaurants and similar establishments; newspapers; and magazines published more often than once every three months. Estimated indirect sales

tax revenues were based on the following assumptions contained in San Francisco Planning and Urban Renewal Association, June 1975, Detailed Findings; Impact of Intensive High-rise Development in San Francisco, Final Report, pp. 265-277:

Percent of Taxable Sales:

Restaurants	100%	Sightseeing	50%
Retail Sales	100%	Auto-Related	85%
Entertainment	50%	Other Items	95%
Local Transportation	0		

/8/ R. Evans, Director of Public Works, City and County of San Francisco, telephone communication, 23 March 1980.

/9/ Further discussion of downtown development and the wet-weather system design of the San Francisco Wastewater Management Program can be found in:

Sedway/Cooke, October 1979, Downtown San Francisco Conservation and Development Planning Program: Phase 1 Study, pp. 55-56.

/10/ D. Cole, Grants Officer, San Francisco Municipal Railway, telephone communication, 28 March 1980.

/11/ Muni and BART average deficits per trip should not be compared because each agency has its own cost-accounting methodology and considerations. Each deficit estimate has been independently derived by these agencies using cost and revenue assumptions unique to each system.

/12/ W. Belding, Senior Economist, Bay Area Rapid Transit District, telephone communication, 28 March 1980.

/13/ In addition to the Hilton Hotel, the Hotel Ramada and Holiday Inn projects are currently under EIR review at the Department of City Planning, Office of Environmental Review. The Office of Environmental Review file numbers for these projects are: Hotel Ramada - EE 80.171; Holiday Inn - Mason and O'Farrell - EE.79.283; and Holiday Inn - Civic Center Addition - EE.79.314.

/14/ R. Sullivan, General Manager, San Francisco Convention and Visitors Bureau, telephone communication, 4 April 1980; and D. Hess, Assistant Manager, San Francisco Convention and Visitors Bureau, telephone communication, 17 April 1980, and H. Sause, Yerba Buena Project Manager, San Francisco Redevelopment Agency, telephone communication, 22 April 1980.

/15/ Laventhol and Horwath, 1 March 1979, Projected Hotel Tax Collections for San Francisco, prepared for Roger Boas, Chief Administrative Officer, City and County of San Francisco. This report is available for public review at the Department of City Planning, Office of Environmental Review.

/16/ G. Skiffer, Housing Coordinator, Department of City Planning, telephone communication, 28 March 1980, and F. Bray, Attorney, Legal Assistance for the Elderly - Tenderloin Office telephone communication, 28 March 1980.

F. TRANSPORTATION, CIRCULATION AND PARKING

EXCAVATION AND CONSTRUCTION IMPACTS

The total construction period is estimated to last for approximately 24 months, with sidewalk and eight ft. of roadway closures on both Taylor and O'Farrell Sts. adjacent to the project site for about 22 months./1/ Excavation would generate an estimated eight truck movements per hour over a two month period. Access to the site for haul vehicles would be from the most southerly point on Taylor St. at the lowest elevation. The haul route from the site is proposed via Taylor, O'Farrell, Stockton and Fourth Sts. to the Interstate Route 80 Freeway. The probable disposal site would be near Candlestick Park. The return route would be via the Interstate Route 280 Freeway, Sixth St. to Taylor St. The truck traffic would lower the abilities of these streets to carry traffic because of such operational characteristics as slower speeds, slower accelerations and large turning radii. There would also be an impact at the Fourth St. on-ramp because of the up-grade and the weaving movement necessary to enter the freeway. During the 7:00 a.m. to 9:00 a.m. morning peak hours, the truck movements would impede transit operations on the O'Farrell St. diamond lane (buses only). Post-excavation construction vehicles would be unloaded from O'Farrell St. because of the level grade on that street. This work would generate an average of 50 truck trips per day.

The sidewalks and eight ft. of the pavement nearest the curb on Taylor and O'Farrell Sts. would be closed. This would remove the existing parking lane on Taylor St. On O'Farrell St., it would force a shift in the diamond lane in the morning peak period where that lane is operational. It would also impair existing bus on-and off-loading maneuvers on O'Farrell St. and disrupt the heavy pedestrian movements near the hotel entrance. Pedestrian flows on O'Farrell St. would be temporarily reduced from an Unimpeded flow level to an Impeded flow level.

Installation and extension of utilities, if needed, could further impede traffic flow on Taylor or O'Farrell Sts. However, these activities generally take place during the off-peak hours between 9:00 a.m. and 4:00 p.m. or at night.

PROJECT TRIP GENERATION

To determine project trip-generation characteristics, two separate surveys were made at the existing 1700-room Hilton Hotel and Tower. These surveys were made during the month of February, 1980. Average hotel occupancy during the survey period was 72%.

Guest Arrival Survey

Upon registering at the hotel, guests were asked how they arrived and whether they had, or intended to, rent a car. Approximately 91% of the guests flew into the Bay Area. About 39% stated they intended to rent a car at some time during their stay at the hotel. Excluded from the survey were guests arriving by charter bus, since their arrival mode was known. The results of the survey are shown in Table 15.

TABLE 15: MODE OF ARRIVAL OF GUESTS AT THE HOTEL

Transportation Mode	Percent
Charter Bus	20
Airporter Bus	33
Limousine	2
Taxi	8
BART (from Oakland AP)	3
Rental Car	22
Own Car	5
Other Car	5
Other	2
	100

Employee Survey

All employees of the existing Hilton Hotel and Tower where surveyed for place of residence and mode of transportation to and from work. Thirty-four percent of the employees responded. The results are summarized in Table 16.

TABLE 16: MODE OF ARRIVAL AND PLACE OF RESIDENCE OF HOTEL EMPLOYEES

	Transportation Mode	Percent
	Drive Car	25
	Other Car (Drop off)	4
	Car Pool	1
	Muni	40
	BART	15
	AC Transit	5
	SamTrans	2
	Southern Pacific	2
	Golden Gate Ferry	1
SUBTOTAL		95
	Bicycle	0
	Walk	5
SUBTOTAL		5
TOTAL		100

	Trip Origin	Percent
	San Francisco	68
	Alameda County	7
	Contra Costa County	6
	San Mateo County	14
	North Bay	5
TOTAL		100

Manual Counts

A series of manual counts were made at the existing Hilton Hotel between the hours of 7:00 a.m. and 6:00 p.m. on Monday and Tuesday, 3 and 4 March 1980. These counts covered both vehicle and pedestrian traffic and were made on all four streets adjacent to the site. The peak hour for hotel-generated vehicular trips was observed to be 5:00 to 6:00 p.m. when most of the employees leave work. This hour does not necessarily coincide with peak times of guest arrival and departure, since most of these person-trips are made in multiple-occupancy vehicles such as charter or Airporter buses. The counts were expanded to cover a typical 24-hour period (see Table 17). Trip generation characteristics were developed and pertain to trips having one end at the hotel (i.e. pedestrian trips listed below may be converted into vehicular trips at nearby parking garages or transit stops).

TABLE 17: VEHICLE TRIP-END GENERATION

Vehicle Trips by Type	Percent of Total Trips
Automobile - Garage	22
Automobile - Curb	36
Taxi	35
Charter & Tour Bus	4
Service Vehicle	3

Buses and Service Vehicles

Total number of buses (charter and tour)	60 (120 trip ends)
Total number of service vehicles	40 (80 trip ends)

Hotel Garage

Vehicle Turnover (Guest Parking)	- 0.66 vehicles/space
Vehicle Turnover (Public Parking)	- 0.50 vehicles/space
Average Occupancy	60%

The project would add approximately 410 rooms to the existing hotel. These rooms would generate about 980 vehicle trip ends daily (2.4 trip ends per

occupied room, derived from manual counts) at the perimeter of the hotel with a p.m peak-hour generation of about 80 trip ends. The vehicular counts at the Hilton Hotel site were of trips made to the on-site garage or curbside of peripheral at streets only. There are other hotel-related vehicle trips by guests and employees that have their ends in the site vicinity, such as to other off-street parking facilities, but could not be counted in the survey. From information developed in the other surveys, it is estimated that the total unit vehicle trip generation is 2.9 trips per occupied room. This figure was used in estimating vehicle miles travelled. These project trips would consist of guest trips, trips made by 150 new employees, and new service vehicle trips. Estimated 24-hour weekday trip characteristics of employees and of guests are shown in Table 18. Vehicle and pedestrian access patterns to the modified hotel are shown in Figure 29, p. 112. Daily pedestrian trip generation is estimated at between 3,500 and 4,000 trips with a noon-hour peak of about 500 trips.

TRAFFIC IMPACTS

The proposed Tower No. 2 would generate a total of about 1,190 vehicular trip ends daily, including an estimated 980 new vehicle trip ends at the hotel or on streets adjacent to it. The evening peak-hour generation at the site, or on streets adjacent to it, is estimated at 80 trip ends. From the vehicle counts made at the hotel, the peak hour for vehicular traffic occurs between 5:00 and 6:00 p.m. The daily trips include 40 new charter and tour bus trip ends (20 buses). The increase in service vehicle trip ends is anticipated to be no more than ten per day.

Current traffic volumes on streets in the project area were expanded to the year 1982, the assumed year of project completion, by an annual factor of 1.8%. This factor was developed in the 1970 Downtown Parking and Traffic Survey made by the San Francisco Department of Public Works. The increases in traffic to the year 1982 and the increases estimated for the project are shown in Table 19, p. 113.

TABLE 18: ESTIMATED 24-HOUR WEEKDAY TRAVEL GENERATED BY HILTON TOWER No. 2 (Person Trip Ends)

EMPLOYEES

Area of Residence	%	One-Way Person Trip Ends		
		Auto	Transit*	Walk**
San Francisco	68	60	130	200
East Bay	13	10	30	40
Peninsula	14	10	30	40
North Bay	5	5	15	20
TOTAL		85	210	300

*Trips made by transit would typically begin as pedestrian trips from the hotel.
**Five percent of San Francisco residents assumed to walk to work.

GUESTS

Area of Trip Origin or Destination	%	Auto*	Transit**	Walk***
San Francisco	70	830	380	3,110
East Bay	6	230	110	80
Peninsula	20	400	380	410
North Bay	4	180	50	40
TOTAL		1,640	920	3,640

*Includes taxis and service vehicles. Vehicle occupancy assumed to be 1.5 for taxis and 1.6 for autos.
**Trips made by public transit would often begin as pedestrian trips from the hotel.
***Pedestrian trips do not include trips to vehicles on the project block or on streets peripheral to the project block.

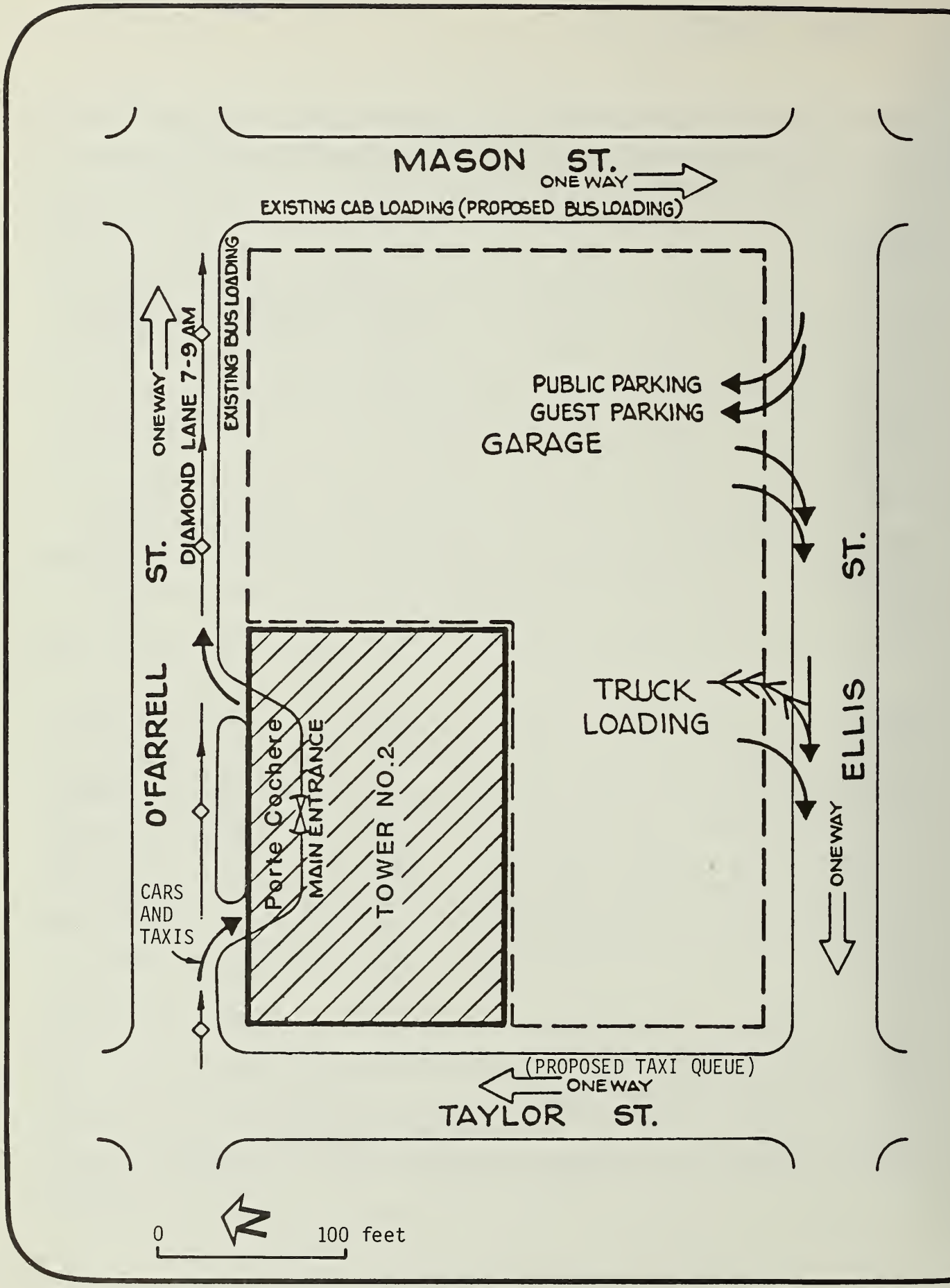


FIGURE 29: VEHICULAR ACCESS PATTERNS

TABLE 19: PROJECTED 1982 VEHICLE VOLUMES ON STREETS NEAR PROJECT

Street	Existing 1980			1982 Base			1982 Base and Project			
	24 Hour	Peak Hour*	Peak 8 Hours	24 Hour	Peak Hour*	Peak 8 Hours	24 Hour	Peak Hour*	Peak 8 Hours	% Increase Peak Hour**
O'Farrell	11,300	660	6,440	11,700	690	6,670	12,190	730	6,770	6
Ellis	12,600	990	7,190	13,100	1,030	7,450	13,450	1,050	7,530	3
Taylor	10,700	890	6,100	11,100	920	6,320	11,530	960	6,460	4
Mason	5,700	460	3,250	5,900	480	3,320	6,280	510	3,520	6

*Single peak hour during the peak period between 4 00 and 6:00 p.m
**Percent increase over 1982 Base traffic volumes.

The impact of project traffic on the volume/capacity ratios and corresponding Levels of Service for the nearby intersections are listed in Table 20. The current intersection volumes were expanded to the 1982 base year by the same factors as for the street volumes. As shown in the Table, all intersections would be operating at Service Level C or better, except Mason and Ellis Sts. which would be borderline Level C - D.

The hotel addition would relocate the main lobby access point to O'Farrell St. from Mason St. by means of a porte cochere (recessed driveway and loading area) a short distance east of Taylor St., as shown in Figure 29, p. 112. The porte cochere would remove the loading and unloading of taxis and automobiles from the street; but these vehicles would use or cross the curb lane, a diamond bus lane which serves the 38-Geary and 38-L Geary limited lines, in entering and exiting the porte cochere. Delays in entering could cause the bus lane to be blocked momentarily; a doorman and a bellperson would be assigned to the new O'Farrell St. entrance to supervise traffic flow in the porte cochere and assist with loading and unloading. Taxis would be loaded from the main O'Farrell St. entrance; they would queue around the corner on Taylor St. and would be called into the porte cochere when needed by a whistle or light signal mounted on the building. The taxi and auto traffic which would travel north on Taylor St. to use this access point could interfere with diamond lane bus operations in the morning peak period when turning the corner to O'Farrell St. This interference would not occur when space is available in the porte cochere, as the signal at O'Farrell and Taylor Sts. would allow a right turn from Taylor St. onto O'Farrell St. only on a green light when the buses would be stopped by a red light, or on a red light when right-turning drivers must yield to through traffic. The interference currently caused by tour and charter buses would be removed from O'Farrell and Ellis Sts.; unloading would occur at the Mason St. entrance to the hotel where taxis currently queue. At 100% occupancy the total number of charter and tour buses at the hotel is estimated at 90 per day (70 for the existing hotel and 20 for the Tower No. 2). From observations made at the hotel, it is estimated that a maximum of six buses would use the curb lane on Mason St. at one time; these could be accommodated without double parking.

TABLE 20: PROJECTED 1982 VOLUME/CAPACITY RATIOS AT PEAK HOUR*

Intersection	Existing V/C Ratio**	Existing LOS***	1982 Base V/C Ratio**	1982 Base LOS***	1982 Base + Project V/C Ratio**	1982 Base + Project LOS***
Mason-Ellis	0.76	C	0.78	C	0.80	C-D
O'Farrell-Taylor	0.56	A	0.58	A	0.58	A
Taylor-Ellis	0.58	A	0.59	A	0.60	A-B
O'Farrell-Mason	0.57	A	0.59	A	0.61	B
Market-Fourth	0.50	A	0.51	A	0.52	A
Market-Fifth	0.46	A	0.47	A	0.47	A
Market-Sixth	0.74	C	0.76	C	0.77	C
Market-Seventh	0.54	A	0.56	A	0.56	A

*The single peak hour during the peak period from 4:00 to 6:00 p.m.
**This is the ratio of the projected volume to service volume at Level of Service E.
***Level of Service (see Appendix E, Table E-2, for a discussion of Levels of Service). The Level of Service A or B designation at the O'Farrell St. intersections with Mason and Taylor Sts. may be misleading. At times during the afternoon, congestion develops at O'Farrell and Powell Sts.; during these periods, traffic can back up on O'Farrell through its intersection with Fifth St. North, Mason and Taylor Sts. When these backups occur, by definition these intersections are operating at Level F, even though they can otherwise handle unrestricted flow at Level of Service C or better. (Transportation Research Board, Highway Capacity Manual. 1965.)

The garage access would remain on Ellis St., as would the truck loading dock entrance. The unloading operations would be improved by the addition of a proposed third dock and remodelling of the existing docks, to reduce truck waiting time on the street, and the corresponding delay to traffic caused by lane blockage. The third dock would represent a proportionately greater increase in dock availability (50%) than the projected increase in service vehicles from 45 per day to 55 (24%) per day. This estimate of ten additional service-vehicle trips per day is based on the 24% increase in rooms which the hotel addition would provide. The arrival of more than three trucks for loading or unloading at the same time would be less probable than an accumulation of more than two trucks at the two existing docks. There could still be an occasional period in which the docking of one or more trucks would be delayed for lack of an available dock. This would be unlikely to occur during the p.m. peak hour of outbound traffic on Ellis St. because peak use of the loading docks occurs between 8:00 and 11:00 a.m.

PARKING IMPACTS

The proposed project would not change the existing number (543) of off-street stalls (public and guest) provided on the site. As previously noted, the guest parking (330 spaces) is fully occupied about three to five weeks per year when local Northern California conventions take place at the hotel. No data are otherwise available to quantify the parking demand during such events. At other times the guest parking is about 2/3 full (220 parked vehicles). Since the project would increase the total number of rooms by about 24%, there should be spaces available on an average day; on local convention days, the excess demand would have to be met by off-site facilities.

The typical demand for guest parking on-site for about 220 spaces represents a peak accumulation of 0.13 parked vehicles per hotel room (1700 rooms). Assuming an average hotel-room occupancy of 85%, this is 0.15 parked vehicles per occupied room. The project (410 rooms) when fully occupied would therefore be expected to produce an additional demand for about 60 spaces of guest parking. About 26% of the surveyed employees indicated that they commuted in automobiles; the 150 new employees would create a demand for about

40 additional spaces. The total parking demand of the project would therefore be for about 100 spaces. The parking survey (Table E-3, p. 224) suggests that these vehicles could be accommodated by the existing available public lots and garages in the near vicinity and in the hotel's 213-space public garage.

The expanded coffee shop, ballroom, tennis courts, and other facilities would primarily serve hotel guests whose parking demands are discussed above. Other users would partly arrive as pedestrians from office buildings or from other downtown hotels or would arrive in the evening after many of the hotel's employees have vacated public parking spaces in the hotel garage or nearby. Street parking may be practical during night hours; however, during the day such parking is subject to the parking time restrictions in effect on streets in the area.

PEDESTRIAN IMPACTS

There would be an estimated 3,500 to 4,000 new pedestrian trips generated daily by the project; about 500 of these trips would be generated during the noon peak hour. The trips would be reoriented to reflect the new main lobby entrance on O'Farrell St. Projected flows on the adjacent streets, including the pedestrian traffic from the project, are shown in Table 21. The sidewalks around the project are wide enough to accommodate the increased traffic and still maintain an Unimpeded or Impeded flow rate during the peak-hour period.

The porte cochere would be the center of most of the baggage-handling activity for the entire Hilton Hotel complex except for tour and charter buses, and baggage which is trucked in which would continue to be handled at the truck loading bays. This arrangement will remove the baggage handling now done at curbside on O'Farrell, Ellis and Mason Sts. to a more efficient area. The effect of this arrangement would be an overall reduction of congestion at the several entrances, which was observed to be an impediment to the pedestrian traffic stream on the sidewalks. Pedestrian traffic on the O'Farrell St.

sidewalk would be interrupted at two new points by vehicles entering and leaving the porte cochere.

TABLE 21: PEDESTRIAN IMPACTS OF PROJECT - NOON-HOUR PEAK 15-MINUTE PERIOD

Sidewalk	Effective Width (ft)	Existing Trips	Hilton Tower No. 2	Total	Rate*	Pedestrian Flow Levels**
Taylor St.	6	130	50	180	2.0	Unimpeded
O'Farrell St.	12	250	120	370	2.1	Impeded
Mason St.	7	310	50 ***	360	3.4	Impeded
Ellis St.	7	140	40	180	1.7	Unimpeded

*Rate in the number of pedestrians per minute per foot of effective width of sidewalks.
**Per Pushkarev (See Appendix F, Table F-1, p. 229)
***Primarily trips to Moscone Center

Because of the hotel's proximity to the Moscone Center, it is anticipated that pedestrian travel between the hotel and center would be encouraged. In the Final EIR for the Yerba Buena (Moscone) Center, pedestrian trips oriented to the north via Fourth St. and the Pedestrian Concourse were estimated at 3,800 during the peak 15 minutes of the 4:30 to 5:30 p.m. peak hour for a "design day" (convention with maximum attendance)./2/ Of these, 35% or 1,330 trips would be single-mode (walking only) trips. This translates to 4,200 (walking only) pedestrian trips during the p.m. peak-hour. This estimate may be somewhat low in view of subsequent proposals for construction of the current project plus the proposed Holiday Inn and Hotel Ramada on adjacent sites. The impact of the Moscone Center during days of maximum attendance may be sufficient to cause p.m. peak-hour pedestrian traffic from the hotel to equal or exceed the noon hour peak. However, the higher element of non-Convention

Center pedestrian traffic on streets adjacent to the hotel during the noon hour would be expected to maintain that period as the peak condition.

Because of the grid street system, there are numerous routes to and from the Moscone Center, but all trips must cross Market St. The estimated pedestrian trips from the existing hotel and the new addition at 100% occupancy are 19,500 daily. These include multiple-mode trips - i.e., pedestrian trips to a transit system, taxi or automobile (except for curbside on the adjacent streets) If an average of 10% of these trips are to the Moscone Center, they would increase the current 52,400 daily pedestrian trips crossing Market St. at Fifth St., Powell St. and Fourth St. by an estimated 3.5%. The trips from the proposed project would increase the trips crossing Market by less than 1%.

TRANSIT IMPACTS

Increases in transit trips generated by the project are estimated in Table 22. Guest trips are typically made during off-peak hours. For worst-case analysis, it is assumed that about 90% of hotel employees either depart or arrive during the 4:00 p.m. to 6:00 p.m. period. The greatest impact on public transit would thus occur on the Muni during the hours between 4:00 and 6:00 p.m. The next greatest impact is anticipated on the Airporter bus system by increased guest arrivals and departures.

Table 23, p. 121 shows projected transit ridership for 1982, including average growth and project trips. The growth factors were derived from the latest available data on annual riderships from the various systems. The capacity of the Muni lines is expected to increase by 10,500 person trips as the result of route changes of Phase 1B of the Muni Five-Year Plan previously noted, and of full development of the Muni Metro system. With respect to the immediate area of the project, the Muni Five-Year Plan projects conversion of its rolling stock to include articulated buses and trolly coaches, newer standard buses and light-rail vehicles to replace existing street cars on Market St. The N and K street-car lines have recently been converted to the Metro mode as a light-rail vehicle under Market St. The capacity of SamTrans will be increased by the addition of new buses./3/ It is anticipated that the private

TABLE 22: PROJECT-GENERATED PERSON-TRIPS BY TRANSIT

Employees	Facility	24 Hour One-way trips	P.M. Peak Hour One-way trips
	Muni	120	50
	BART	50	20
	AC Transit	20	10
	Sam Trans	10	5
	Other	10	5
Sub-Total		210	90
Guests	Muni (Cable Car)	150	20
	BART	40	10
	Other Public Transp.	20	10
	Charter & Tour Bus	540	60
	Airporter	170	40
Sub-Total		920	140
Total Transit Trips		1,130	230

Airporter bus system would expand its services as required to accommodate the passengers from the Hilton Tower No. 2 and the two others proposed on adjacent blocks./4/ All other system capacities are assumed to remain the same; it should be noted that BART capacity may be increased by reduced headway times.

CUMULATIVE TRAFFIC IMPACTS

Other pending developments in the project vicinity which would have an impact on traffic and transportation facilities include two new hotels proposed

TABLE 23: 1982 PROJECTED TRANSIT CHARACTERISTICS OF THE PROJECT- P.M. PEAK-HOUR OUTBOUND ONLY

	Existing		1982 Base		1982 Base + Hilton Hotel Tower No. 2		
	Ridership	% Capacity	Ridership	% Capacity	Ridership	% Capacity	% Increase***
Muni*	--	--	15,900	92	15,950	92	0.3
BART	17,000	72	20,400	86	20,430	86	+
AC Transit	9,600	85	10,900	96	10,910	96	+
Sam Trans	1,000	80	1,300	87 **	1,310	87 **	+
SPRR	7,000	70	8,000	80	8,010	80	+
Golden Gate							
Motor Coach	6,200	90	7,100	103	7,100	103	+
Ferry	1,370	65	1,600	76	1,600	76	+
Harbor							
Carriers	430	61	500	71	500	71	+
Airporter	300	75	320	80	360	90	10.0

*Lines: J, K, L, M, N 5, 6, 7, 8, 9, 11, 12, 14, 14L, 14X, 16, 25, 30, 33, 38, 38X. 66, 71, 72, excluding cable cars.
**SamTrans 1982 capacity assumed to increase by 20% (L. Stuek, Supervisor of Program Development, SamTrans).
***Percent increase in ridership over 1982 Base year.
+Percent increase less than 0.1%.

adjacent to the site. These are the 1,000-room Holiday Inn at O'Farrell and Mason Sts. and the 1,000-room Hotel Ramada at Mason and Ellis Sts. There are also proposed changes in the directional designations (one-way or two-way) of streets serving these hotels. In one proposal, Fifth St. North (see Figure 1, p. 7) would be converted to two-way operation between O'Farrell and Ellis Sts. In another, Powell St. would be made one-way southbound between Geary and Ellis Sts; the northbound traffic lane would be reserved for pedestrians and cable cars. In a third proposal, Mason St. would be made two-way between Market St. and Geary St., thus providing a northbound lane to accommodate traffic displaced from Powell St., if it is made one-way southbound.

Using the total vehicle-trip-end generation rate of 2.9 trips per occupied room, the trip ends estimated for the Holiday Inn at 100% occupancy are about 2,900 daily and 240 during the peak hour. For the Hotel Ramada, the estimated trips are about the same. The cumulative p.m. peak-hour traffic volumes on the streets adjacent to the Hilton are listed in Table 24. This table shows current traffic volumes expanded to the year 1982, volumes added by the other two hotels, and total volumes from the other two hotels plus the Hilton Hotel Tower No. 2. The Hilton Hotel volumes assume 100% occupancy of the project.

From Table 24, the largest proportionate cumulative increase in peak-hour traffic volumes is projected on Mason St., at about 24%. However, the current volumes are lowest on this street and the cumulative volumes remain correspondingly low.

The volume/capacity ratios for the nearby intersections under the same conditions of Table 24 are shown in Table 25, p. 124. The Service Level at Mason St. and Ellis St. would be lowered to Level D. All other intersections would remain at Level C or better.

TABLE 24: PROJECTED CUMULATIVE VEHICLE VOLUMES

Street	1982 Base			1982 Base + Other Hotels				1982 Base + Other Hotels + Tower No.2			
	24 Hour	Peak Hour*	Peak 8 Hours	24 Hour	Peak Hour	Peak 8 Hours	%Increase Peak Hour**	24 Hour	Peak Hour	Peak 8 Hours	%Increase Peak Hour***
O Farrell	11,700	690	6,670	12,630	780	7,060	13	13,120	820	7,340	5
Ellis	13,100	1,030	7,450	14,150	1,120	7,920	9	14,500	1,150	8,110	3
Taylor	11,100	920	6,320	12,090	1,000	6,750	9	12,520	1,040	7,000	4
Mason	5,900	480	3,370	7,000	570	3,910	19	7,380	600	4,130	5

*Single peak hour during the peak period between 4:00 and 6:00 p.m.
**Percent increase over 1982 base traffic volume
***Percent increase over 1982 Base + Other Hotels

TABLE 25: PROJECTED CUMULATIVE VOLUME/CAPACITY RATIOS AT PEAK HOUR*

Intersection	1982 Base		1982 Base + Other Hotels		1982 Base Project + Other Hotels + Hilton Tower No. 2	
	V/C Ratio**	LOS***	V/C Ratio**	LOS***	V/C Ratio	LOS
Mason-Ellis	0.78	C	0.83	D	0.85	D
O'Farrell-Taylor	0.58	A	0.60	A-B	0.60	A-B
Taylor-Ellis	0.59	A	0.61	B	0.61	B
O'Farrell-Mason	0.59	A	0.63	B	0.63	B
Market-Fourth	0.51	A	0.55	A	0.55	A
Market-Fifth	0.47	A	0.48	A	0.48	A
Market-Sixth	0.76	C	0.78	C	0.79	C
Market-Seventh	0.56	A	0.56	A	0.57	A

*The single peak hour during the peak period from 4:00 to 6:00 p.m
**This is the ratio of the projected volume to service volume at Level of Service E.
***Level of Service (see Appendix E, Table E-2, for a discussion of Levels of Service). The Level of Service A or B designation at the O'Farrell St. intersections with Mason and Taylor Sts. may be misleading. At times during the afternoon, congestion develops at O'Farrell and Powell Sts.; during these periods, traffic can back up on O'Farrell through its intersection with Fifth St. North, Mason St. and Taylor St. When these backups occur, by definition these intersections are operating at Level F, even though they can otherwise handle unrestricted flow at Level of Service C or better. (Transportation Research Board, Highway Capacity Manual, 1965.)

The total number of buses generated by each project, assuming 100% occupancy, is as follows:

Hotel	Charter	Tour	Total
Hilton Tower No.2	10	10	20
Holiday	30	20	50
Ramada	30	20	50
Total	70	50	120

Because of the proximity of the three hotels, there may be some overlap in tour buses, since one bus may serve two or more hotels. Of the 120 buses daily (240 trips), 20% or about 50 trips are projected for the hour between 5:00 p.m. and 6:00 p.m. Over 50% of these would be tour buses.

The number of delivery and service vehicles which would be generated by the Hilton Tower No 2 would be about ten per day. The number to the Holiday Inn and Hotel Ramada are estimated at 30 each, giving a total of 70 trucks daily. This translates to 140 delivery and service-vehicle trip ends. Few, if any, service trips are made during the p.m. peak-hour period. Because of the locations of the three hotels' service bays, 50% of all trips must pass through the Ellis St. and Mason St. intersection. These trips would be spread fairly evenly over the nine-hour period from 7:00 a.m. to 4 00 p.m., so the average hourly volume through the intersection would be eight trips. The peak hour for service vehicles is from 7:00 a.m. to 8:00 a.m., at 15% of the daily volume, or ten trips. Figure 30 shows the locations of the three hotels and the proposed access points for each. The larger impact of service vehicles is not travel on the adjacent streets but lane blockages during docking maneuvers.

Street Pattern Changes Under Consideration. The proposal to change Fifth St. North, presently one-way between O'Farrell and Eddy Sts., to two-way between O'Farrell and Ellis Sts. would leave the one-block segment on the western side of the proposed Ramada Hotel site one-way northbound (see Figure 30). Southbound through-traffic from O'Farrell St. to Market St. would, therefore, not be diverted from Mason and Stockton Sts. to Fifth St. North as the result of the proposed change. The principal effect would be to improve access to the Holiday Inn which is proposed for construction on the block bounded by

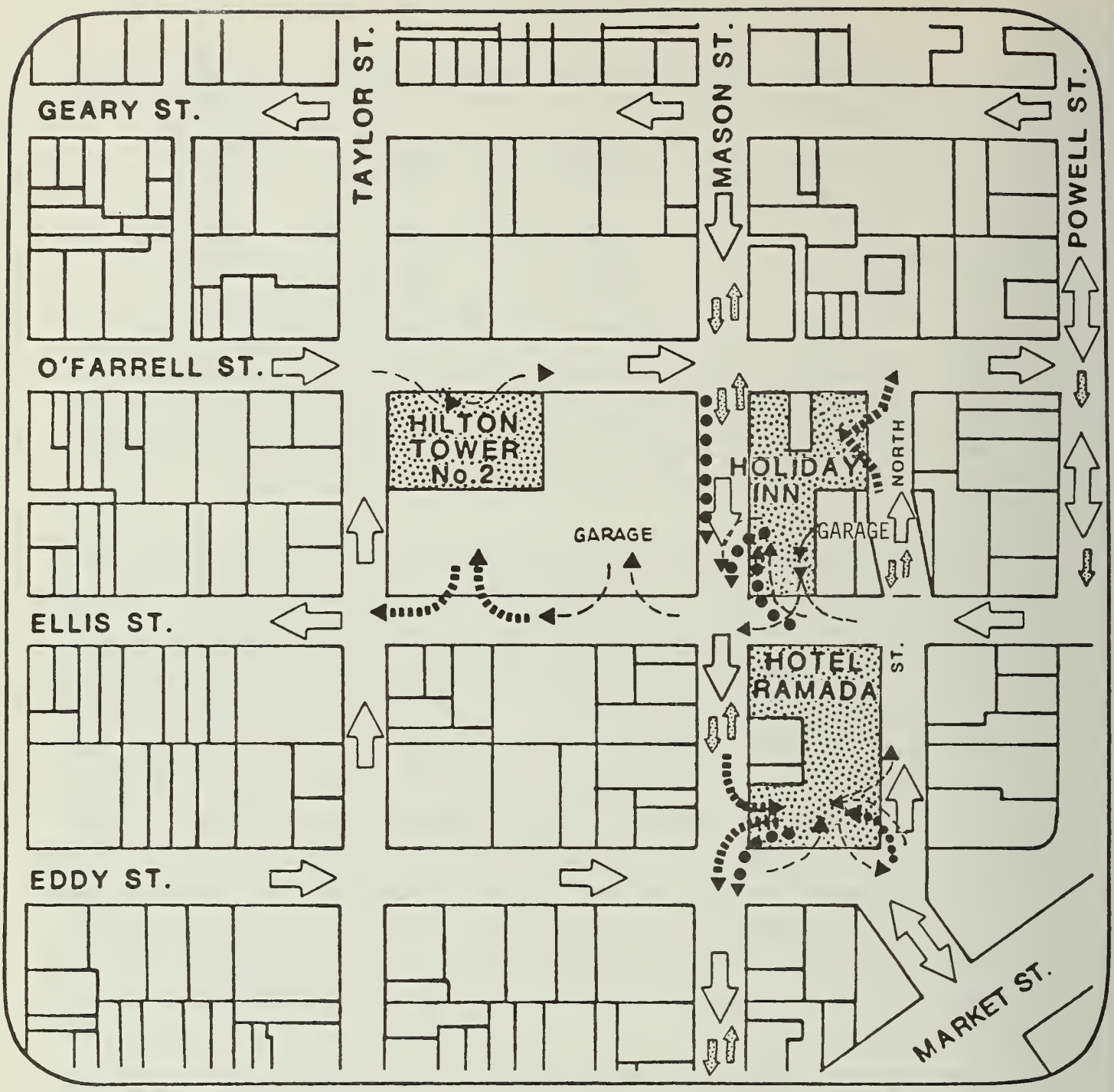


FIGURE 30: CUMULATIVE HOTEL ACCESS IN THE VICINITY OF THE PROJECT SITE

O'Farrell, Fifth St. North, Ellis, and Mason Sts. (see Figure 30). The proposed porte cochere at the southwest corner of the Holiday Inn site would be entered from Ellis St., and the proposed two-way designation of Fifth St. North would allow the Ellis St. entrances of the proposed Holiday Inn to be reached from O'Farrell St. by a right turn onto Fifth St. North. The curb lane on the west side of Fifth St. North might also then serve to store tour and charter buses for the hotel.

The intersection of O'Farrell and Powell Sts. was observed during the 4:00 to 6:00 p.m. period on Tuesday, 12 August 1980. The peak hour for O'Farrell St. traffic was 5:00 to 6:00 p.m.; 260 vehicles were observed in left-turn movements from O'Farrell St. into the northbound lane of Powell St. These turns, as well as the other turning movements at the intersection conflicted with heavy pedestrian crossing flows so that vehicles were often left in the intersection at the conclusion of the green cycle. Momentary interference with Powell St. through traffic often ensued. The designation of Powell St. as one-way southbound between Geary and Ellis St. would remove these left turns from the intersection and thereby improve operating conditions at the intersection and at the intersection of Powell and Geary Sts. one block to the north. The displaced left turns could then be made at Grant Ave. two blocks east of Powell St.

Or, if Mason St. were to be made two-way between Geary and Market Sts., the displaced left turns from O'Farrell St. to Powell St. could be made onto Mason St. northbound. This change would have two effects on the peak hour volume-to-capacity ratio of the intersections of Mason and O'Farrell Sts. Capacity would be reduced by the loss of one lane in the southbound approach, and the left turns would conflict with pedestrian crossing traffic on the north side of O'Farrell St. and consume additional signal green time. The combined effect would be to increase the ratio of volumes to capacity at the intersection by more than 12%. The impact could be twice as much if the curb lane in the northbound side of O'Farrell St. were not effectively kept clear of stopped vehicles for the left-turning movements from O'Farrell St to Mason St. The peak-hour service level would be reduced to C or D. The

designation of Mason St. as two-way would also attract some of the trips now northbound on Taylor St.

Mason St. as a two-way street would allow buses and perhaps taxis to be loaded or unloaded at the proposed Holiday Inn with the right side nearest the curb. Otherwise, the proposed porte cochere at the southwest corner of the site would have to accommodate buses, taxis, and autos; interference with outbound Ellis St. traffic might otherwise occur as the result of delays in loading and unloading.

Entry to the garage of the proposed Holiday Inn would be from Ellis St. at a driveway east of the porte cochere - a direction contrary to the one-way westbound designation of Ellis St. The two-way designation of Mason and Fifth St. North would allow the vehicles leaving the porte cochere to be dirven clockwise around the block to the garage. Mason St. would then also provide a new more direct access route to the truck docks of the proposed Hotel Ramada from Market St.

CUMULATIVE PARKING IMPACTS

The three proposed hotel projects would effect a net reduction in the existing supply of public off-street parking. The Hilton Hotel Tower No. 2 would not include any additional public or guest off-street parking. The construction of the proposed Holiday Inn and Hotel Ramada would remove 80 and 150 spaces respectively. There is currently sufficient off-street parking available in the general vicinity to absorb this loss. The long-term effect of the hotel projects would be a reduction in the amount of long-term off-street parking. The on-site parking supply and demand figures would be as shown in Table 26.

From the Table, there would be an estimated deficit of about 210 spaces in guest parking at the hotels during periods of peak seasonal demand. From the off-street parking survey, there would remain approximately 600 spaces available on an average day to absorb this demand, after construction of the two new hotels has removed 230 existing spaces.

TABLE 26: CUMULATIVE HOTEL PARKING DEMAND AND ON-SITE SUPPLY

Hotel	Supply	Demand*	Deficit
Hilton Tower No. 2	220**	100	none
Holiday Inn	160***	250	- 90
Hotel Ramada	130****	250	-120
			-210

* At full room occupancy; guests and employees.
** There are currently about 220 vacancies in the public and guest parking areas on a typical day. No new parking is proposed. At full room occupancy during local conventions, guest and public parking spaces in the existing hotel's garage are fully occupied; this occurs from three to five weeks per year.
*** 80 existing spaces would be eliminated by the Holiday Inn.
**** Assuming valet parking; 150 existing spaces would be eliminated by the Hotel Ramada.

On-street parking on the streets adjacent to the hotels would likely be also removed and replaced with passenger loading and taxi zones. The reduction in spaces would depend on the final designation and size of these zones.

CUMULATIVE PEDESTRIAN IMPACTS

It is assumed that the strongest pedestrians attractions would be the area generally easterly and southeasterly from the site - to stores, restaurants, offices and particularly to events at the Moscone Center. The compactness of the downtown area and the attention which has been given to development of lower Powell St. and Market St. into pedestrian-oriented facilities, encourage the pedestrian mode of travel. Also, the high level of street lighting on Market St. encourages pedestrian trips in the evening hours.

If the 10% of pedestrian trips from the Hilton to the Moscone Center previously assumed were applied to the cumulative projects, the daily pedestrian traffic across Market St. could increase by an estimated 7%. This

figure includes reorientation of pedestrian traffic from the existing Hilton Hotel and Tower. Excluding trips from the existing Hilton Hotel and Tower, the increase would be about 4%.

The pedestrian flow levels under the cumulative impact of the Hilton addition and the other two hotels at 100% occupancy are given in Table 27. From that table, none of the sidewalks adjacent to the Hilton Hotel would be reduced below an Impeded flow level. The heaviest impact of pedestrian flow would occur on the intervening sidewalks between the hotel and the major attractions. Because of the diversity of possible routes, exact number of trips on specific streets and sides of streets cannot be estimated.

TABLE 27: CUMULATIVE PEDESTRIAN IMPACTS - NOON-HOUR PEAK 15-MINUTE PERIOD

Sidewalk	Effective Width ft.	Existing Trips	Other Hotels	Hilton Tower No. 2	Total	Rate	Pedestrian Flow Level*
Taylor St.	6	130	30	50	210	2.3	Impeded
O'Farrell St.	12	250	40	120	410	2.3	Impeded
Mason St.	7	310	30	50	390	3.7	Impeded
Ellis St.	7	140	80	40	260	2.5	Impeded

* Pedestrians per foot of sidewalk width per minute.
** See Appendix F, Table F-1, p. 229, for a discussion of pedestrian flow levels.

CUMULATIVE TRANSIT IMPACTS

Table 28 lists the cumulative impacts on p.m. peak-hour outbound transit projected for the three hotels. The increased ridership on the Muni would be about 2%. All others would be less than 1%, with the exception of SamTrans, estimated at slightly over 2%. The only transit service projected to operate in excess of capacity is the Golden Gate Motor Coach; that condition would

TABLE 28: PROJECTED CUMULATIVE PUBLIC TRANSIT CHARACTERISTICS - P.M. PEAK-HOUR OUTBOUND ONLY

	1982 Base		1982 Base + Other Hotels			1982 Base + Hilton Tower No. 2		
	Ridership	%Capacity	Ridership	%Capacity	%Increase*	Ridership	%Capacity	%Increase**
Muni***	15,900	92	16,220	94	2.0	16,270	94	0.3
BART	20,400	86	20,580	87	0.8	20,610	87	0.1
AC Transit	10,900	96	10,950	97	0.5	10,960	97	0.1
Sam Trans	1,300	87	1,320	88	1.5	1,330	89	0.8
SPRR	8,000	80	8,020	80	0.3	8,030	80	0.1
Golden Gate								
Motor Coach	7,100	103	7,110	103	0.1	7,110	103	+
Ferry	1,600	76	1,610	77	0.6	1,610	77	+
Harbor								
Carriers	500	71	510	73	2.0	510	73	+

*Percent increase in ridership over 1982 Base Year.
**Percent increase in ridership over 1982 Base Year + Other Hotels.
***Lines: K, L, M, N 5, 6, 7, 8, 9, 11, 12, 14, 14L. 14X, 16, 25, 30, 33, 38, 38X, 66, 71, 72, excluding cable cars.
+Percent increase less than 0.1%

occur without the additional hotel traffic. The primary riders of transit would be the new employees, estimated at about 1,200 for all three projects. The travel habits of all employees were assumed to be similar to those of the Hilton survey.

The two proposed new hotels and the Hilton Tower No. 2 would have an estimated 3,800 guests at full occupancy. The guests would be heavy users of private transit - charter and tour buses, Airporter, Lorries, etc. - but not of public transit, and typically, not of public transit during the p.m. peak hour. The main public transit attractions for hotel guests are anticipated to be the cable cars (particularly the Powell St. lines), the proposed E Embarcadero street car line and BART. A total of about 100 new guest trips during the peak hour has been estimated for the Muni, and it is anticipated that virtually all of these would be on the Powell St. cable cars, increasing the ridership by about 5.5% to about 90% of capacity. Approximately 20% of these trips would be due to the Hilton Tower No. 2.

Table 28 considers the additional transit ridership generated by the two new hotels and the Hilton addition only. However, while the impacts on vehicular and pedestrian traffic and on parking are largely localized, the impact on transit, particularly serving the Downtown, would be imposed on the area-wide systems.

It is noted that ridership is averaged over the peak hour in all calculations, and there are periods during that interval when capacity will be reached or exceeded, particularly for the Muni and BART. As ridership increases, these periods will become longer and delay to passengers will increase accordingly.

NOTES - Transportation, Circulation and Parking

/1/ J. Cahill, President, Cahill Construction Company, letter communication, 31 January 1980.

/2/ Yerba Buena Center, Final Environmental Impact Report, Volume 2, prepared for the San Francisco City Planning Commission and San Francisco Redevelopment Agency. 1978, (EE 77.220).

/3/ L. Stuek, Supervisor of Program Development, SamTrans, telephone communication, 16 April 1980.

/4/ G. Espoto, General Manager, Airporter Service, telephone communication, 16 April 1980.

G. AIR QUALITY

PROJECT AIR QUALITY IMPACT

Demolition, earthmoving and construction activities would affect local air quality, especially particulate (dust) concentrations, for approximately two years. In contrast to gaseous pollutants and to small-size particulates from combustion, most of the particulates from construction are of large size and settle out of the atmosphere rapidly near the source. In addition, larger particles have less tendency to enter the lungs than small particulates. During construction, generation of small-size particulates (less than 30 microns in diameter), which may remain suspended indefinitely and are a health hazard, has been estimated to be at a rate of 1.2 tons per acre per month of activity./1/ This would include emissions from excavation and earthmoving, traffic on unpaved surfaces, wind erosion and construction of structures. Without mitigation, this rate could result in a worst-case 24-hour concentration of approximately 6,890 micrograms per cubic meter (ug/m^3) at and adjacent to the site during the excavation and earthmoving phases. This would be about 69 times the State 24-hour standard of 100 ug/m^3.

The use of oil-based paints would generate hydrocarbon emissions, typically 500 to 700 grams per liter of paint used. Hydrocarbon emissions are important because they react with nitrogen oxides in the presence of sunlight to form ozone (smog). Regulation 8, Rule 3 of the BAAQMD prohibits the sale and application of: architectural coatings that contain more than 250 grams of volatile organic compounds (VOC) per liter, except that interior coatings shall contain not more than 350 grams; and any architectural coating after 2 September 1980 that contains more than 250 grams of VOC. per liter.

After completion of the project, approximately 980 vehicular trip ends would be generated by the Hilton Tower No. 2 per day at full occupancy. The largest percentage traffic increase due to the project would be on Mason St. Here roadside carbon monoxide (CO) concentrations would be increased through the addition of approximately 380 vehicles per day. Current (1980) curbline CO concentrations on Mason St. between O'Farrell and Ellis Sts. are estimated to be approximately 16.9 parts per million (ppm) and 9.0 ppm during the peak hour and peak eight hours, respectively./2/ In 1982, CO concentrations on Mason St. would be approximately 14.9 ppm and 7.9 ppm during the peak hour and peak eight hours, respectively, without the project; and 15.2 ppm and 8.0 ppm respectively, with the project. The Federal CO standards are 35 ppm for one hour and 9 ppm for eight hours.

Ellis St. between Taylor and Mason Sts. does have in 1980, and is expected to have in 1982, the highest traffic volumes, and therefore would have the highest CO levels in the area. Concentrations in 1980 are estimated at 20.0 ppm and 9.8 ppm during the peak hour and peak eight hours, respectively. In 1982, they would be approximately 17.6 ppm and 8.7 ppm, respectively, without the proposed hotel, or 50% and 97% of the Federal one-hour and eight-hour standards, respectively. With project-generated traffic, these concentrations would be 17.9 ppm and 8.8 ppm, respectively, or 51% and 98% of the standards. The project would not of itself cause violations of the standards. It would increase concentrations by 0.3 ppm or less on Ellis and Mason for both one-hour and eight-hour averaging times. Worst-case CO levels during peak hour are projected to be within 5% of the standard both without and with the project./2/ CO levels in 1982 both with and without the project would be reduced from current values because of emission controls on vehicles mandated by state and federal governments. The levels are projected assuming that emission control standards will not change.

The project would also generate pollutants from the combustion of natural gas by Pacific, Gas and Electric Company (PG&E) to produce steam for space heating and hot water at Hilton Tower No. 2. Table 29 compares project-generated

traffic and building-operation emissions to total emissions in the nine-county Bay Area.

TABLE 29: PROJECTED 1982 DAILY PROJECT-GENERATED EMISSIONS (TONS/DAY)

	Vehicular Fuel Combustion*	Natural Gas Combustion**	Approximate Total Project Emissions	1985 Projected Regional Emissions***
Carbon Monoxide	0.173	negligible	0.173	1,391
Hydrocarbons	0.015	negligible	0.015	777
Nitrogen Oxides	0.015	negligible	0.015	662

*BAAQMD, 1979, EMFAC-5, Vehicular Emission Factors. Calculations were based on the following assumptions: 100% occupancy of 410 guest rooms; 2.9 trips per occupied room, averaging 11.3 miles per trip; 4 min. idle per trip; and average speed when not idling of 30 m.p.h.
**"Negligible" denotes emissions less than 0.001 tons per day. This category includes emissions from heating and hot water and other building operations. U.S. EPA, 1977, Compilation of Air Pollutant Emission Factors, AP-42 Third Edition, p. 1.4-1--1.4-3.
***W. Crouse, Senior Environmental Specialist, BAAQMD, telephone communication, 9 April 1980. The region is the nine-County Bay Area Air Quality Management District.

SOURCE: Environmental Science Associates

CUMULATIVE AIR QUALITY IMPACT

If the proposed Hilton Tower No. 2, Hotel Ramada and Holiday Inn were all built simultaneously, high particulates concentrations from construction activities would be spread over a greater area than if the Hilton alone were constructed.

The cumulative effect of the completed project and of the completed recently proposed Hotel Ramada and Holiday Inn on CO levels in the Tenderloin area was estimated./2/ The results of the analysis are shown in Table 30. Peak

one-hour CO concentrations on both Mason and Ellis Sts. would be below the standard during worst case conditions. The CO concentrations in 1982 on Mason and Ellis Sts. averaged over eight hours, if the project and other proposed major buildings were completed, would be approximately 0.51 ppm and 0.48 ppm higher, respectively, than if no projects were built. Cumulative development would cause the eight-hour standard to be exceeded on Ellis St.

TABLE 30: PROJECTED WORST-CASE CUMULATIVE ROADSIDE CARBON MONOXIDE CONCENTRATION IMPACTS - PARTS PER MILLION (PPM)/2/

Streets	1980	1982 Base Case	1982 Plus Other Hotels	1982 Plus Other Hotels and Hilton Tower No. 2
Ellis (between Taylor and Mason)				
Peak 1-hour (Standard = 35 ppm)	19.98	17.58	18.25	18.52
Peak 8-hour (Standard = 9 ppm)	9.87 *	8.69	9.04 *	9.17 *
Mason (between O'Farrell and Ellis)				
Peak 1-hour (Standard = 35 ppm)	16.93	14.90	15.62	15.88
Peak 8-hour (Standard = 9 ppm)	9.01	7.93	8.30	8.44

* There values are those which would exceed the applicable standard.

SOURCE: Environmental Science Associates, Inc.

In summary, cumulative hotel development in the Tenderloin would add to local and regional accumulations of CO, hydrocarbons and nitrogen oxides (the latter two being precursors of ozone), and particulates. During adverse meteorological conditions such as inversions, such accumulations can be great enough to constitute health problems. The recently adopted regional Air Quality Plan/3/ found that ozone was a regional problem and would continue as such in the future, unless substantial reductions in hydrocarbon emissions

were made. CO and particulates are problems on a local scale. Because the development would increase emissions of hydrocarbons, CO, and particulates, attainment of the standards would be impeded, although the development would not directly conflict with the control strategies of the Air Quality Plan.

NOTES - Air Quality

/1/ U.S. Environmental Protection Agency (U.S. EPA), 1975, Compilation of Air Pollutant Emission Factors, Supplement #5, p. 11.2.4-1.

/2/ CO calculations were made for the worst-case poor-dispersion meteorological conditions according to the BAAQMD Guidelines for Air Quality Impact Analysis of Projects, 1975, updated for 1979 emission factor revisions. Background concentrations were assumed, on the basis of the average of the second-highest concentrations recorded over the past 3 years, and emissions projections assuming "minimum reasonable further progress" in ABAG, August 1979, 1979 Update of the San Francisco Bay Area Environmental Management Plan, Figure 2-5, p. 42, to be 14.4 ppm (one-hour) and 8.3 ppm (eight-hour) in 1980, and 12.7 ppm (one-hour) and 7.3 ppm (eight-hour) in 1982.

/3/ Association of Bay Area Governments, BAAQMD, and Metropolitan Transportation Commission, January 1979, 1979 Bay Area Air Quality Plan, San Francisco Bay Area Environmental Management Plan.

H. NOISE/1/

CONSTRUCTION NOISE IMPACT

Excavation, construction and interior finishing work would take approximately two years, during which noise from construction equipment and procedures would occur. Table 31 shows typical construction noise levels.

No piles would be driven during construction of the foundations. Soldier beams and lagging would be used for shoring along Taylor and O'Farrell Sts.; driving of the soldier beams would take approximately two weeks. During this time, noise levels of 106 to 111 dBA/2/ at 50 feet would be produced./3/ In hotels and residences nearby, noise levels would reach as high as 98 dBA. Vibrations from the impact of the diesel hammer used to drive the soldier beams would be felt in buildings nearby; in the past, these vibrations have been found to be more disturbing to some people than the high noise levels.

TABLE 31 TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS AT 50 FEET

Construction Phase	Average Noise Level
Excavation	89 dBA
Foundations	78
Erection	85
Finishing	89

SOURCE: Bolt, Beranek, and Newman, December 31, 1971, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, U.S. Environmental Protection Agency, p. 20.

To reduce the disturbance from this operation, the contractor would be required by the Department of Public Works to drive the soldier beams during specified hours, and to use a particular type of diesel hammer which is quieter than others available./3/

The San Francisco Noise Ordinance (Section 2907b) limits noise emissions from any powered-construction equipment to 80 dBA at a distance of 100 ft. If this limit were adhered to, powered construction equipment would cause noise levels at the nearest building to be no greater than present maximum intermittant noise levels due to traffic. When maximum traffic noise and maximum powered-construction equipment noise occurred simultaneously, the noise level would increase by 3 dBA over that of the maximum traffic noise alone, and would be about 89 dBA at the building nearest the site. Construction noise would be of a continuous nature, in contrast to the intermittent loud noises produced by buses and other noisy vehicles.

Land uses surrounding the construction site include office space, parking, transient-tourist hotels, retail, entertainment, and residential hotels. The original Hilton Hotel and Tower surround the construction site on the south and east sides. Noise levels experienced in the Hilton guest rooms facing the site, with windows closed, would probably reach about 65-70 dBA (except during the driving of soldier beams). Normal speech and rest could be disturbed.

Similar noise levels could be experienced in buildings to the north and west of the site where the aforementioned uses occur.

The Hotel Ramada and the Holiday Inn are presently proposed to be built in the vicinity of the proposed project during the same period. There is approximately a 6 dBA reduction in noise levels per doubling of distance, and the existing Hilton Hotel would serve as a noise barrier. Therefore, in areas near the Hilton the construction noise from the Hilton would dominate the environment, masking the noise impact from the other two sites, which are located adjacent to each other. At the site, noise from Hotel Ramada and Holiday Inn construction would be at about the same level as background noise. Near the Ramada and Holiday Inn sites, noise from construction of these two hotels would mask any noise from the Hilton construction, which at these locations would be at about the same level as the background noise.

Trucks transporting construction materials and excavated materials produce noise levels of 83 to 93 dBA at 50 ft./4/ The Hilton project alone would produce truck traffic on the average of 25 truck round trips per day. The projected maximum number of daily truck round-trips is 40 (for route descriptions refer to IV.F., p. 106) To assess a worst-case situation, on a day with maximum truck traffic, if 1/5 of the truck travel occurred during a single hour, one project-related truck would travel along the route on an average of once every 7-1/2 minutes during this hour. Buses and trucks on the routes produce noise levels similar to construction tracks. Maximum noise impacts would occur during the first two months of construction when large haul trucks at a maximum rate of three per hour would transport excavated material from the site. Momentary interruptions of conversation along the haul route, including Union Square where a park and department and small retail stores are located, would result.

In the case that the project, the Holiday Inn, and the Hotel Ramada were constructed simultaneously, construction related traffic could be as high as 30 trucks per hour, or one truck on an average of every two minutes.

COMPATIBILITY WITH EXISTING NOISE LEVELS

The City of San Francisco has adopted guidelines for determining the compatibility of various land uses with different noise environments (Environmental Protection Element of the San Francisco Comprehensive Plan, adopted by City Planning Commission Resolution No. 7244, 19 September 1974, p. 19). The existing exterior Ldn levels at the site are estimated to be about 65 to 72 dBA./6/ For noise levels over 60 dBA, the guidelines indicate that an analysis of noise reduction requirements and inclusion of noise insulation features in the building design should be made. The State of California (California Administrative Code Title 25, Chapter 1, Subchapter 1 Article 4) requires that the interior CNEL/7/ for newly constructed hotels with windows closed be less than or equal to 45 dBA. The State requires that an acoustical analysis be done, showing that the proposed building has been designed to limit noise to 45 dBA inside the guest rooms with windows closed. The City requires that this analysis be submitted to the Superintendent of Building Inspection with the application for a site permit.

Windows in the guest rooms of the proposed Hilton Tower No. 2 would open a maximum of nine inches. With windows open, Ldn levels inside the rooms would be reduced from exterior levels by 10-15 dBA, to about 50 to 62 dBA. Intermittent noise from individual trucks and buses passing the site would cause interior noise levels to rise temporarily up to approximately 15 dBA. Generally, noise levels above 60 dBA would interfere with normal speech.

NOISE IMPACTS ASSOCIATED WITH THE PROPOSED USE

After the structure is built and occupied, local noise levels could change in two ways: noise due to increased traffic generated by the project and mechanical-equipment noise.

The amount of traffic generated by operation of the project, during any hour of the day, would cause average traffic noise levels on the surrounding streets to increase by less than 2 dBA. A 2-dBA increase in environmental

noise is generally not perceptible to the untrained human ear. No noise impact associated with increased traffic would therefore be expected, due to the Hilton Hotel Tower No. 2 alone. Were proposed Tower No. 2, the Holiday Inn and Hotel Ramada to be built, a perceptible increase in environmental noise along nearby streets could occur primarily as a result of tour and charter bus travel by hotel guests.

The mechanical equipment to be used in the structure has not yet been chosen. The fourth floor (lowest floor in the guest room tower) would be a mechanical equipment floor. Historically, mechanical equipment in buildings has increased environmental noise levels in downtown San Francisco./3/ Mechanical equipment noise is regulated by the San Francisco Noise Ordinance, Section 2909, "Fixed Source Noise Levels"(San Francisco Municipal Code, Part II, Chapter VIII, Section 1, Article 29, 1972). The project site and surrounding area are zoned C-3-G, C-3-R and Public. In the C-3-G and C-3-R zones, the Noise Ordinance limits equipment noise levels to 70 dBA between 7:00 a.m. and 10:00 p.m. and 60 dBA between the hours of 10:00 p.m. and 7:00 a.m. at the receiver's property line. During lulls in the traffic, mechanical equipment generating 70 dBA would dominate the site noise environment. If equipment noise were to be limited to 60 dBA to meet the nighttime limit, it would generally be inaudible off site during the day. Mechanical equipment from the proposed project would not be audible on Mason St. and would not be expected to contribute to any cumulative mechanical equipment noise impact generated by the proposed Hotel Ramada and Holiday Inn.

NOTE - Noise

/1/ For a discussion of fundamental acoustical concepts and measurement units, please refer to Appendix H, p. 233.

/2/ dBA is the measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to various frequencies of sound.

/3/ C. Brady, Senior Mechanical Engineer, San Francisco Department of Public Works, telephone communications, 18 December 1979, 9 and 21 April 1980.

/4/ Bolt, Beranek and Newman, 31 December 1971, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, U.S. Environmental Protection Agency, p. 11.

/5/ L_{dn}, the day-night average noise level, is a noise-level descriptor based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises (noise between 10:00 p.m.and 7:00 a.m. is weighted 10 DBA higher than daytime noise.

/6/ San Francisco Comprehensive Plan, Environmental Protection Element, adopted 19 September 1974, p. 17.

/7/ CNEL, the Community Noise Equivalent Level, is similar to Ldn except that sound level measurements taken between 7:00 p.m. and 10:00 p.m. are weighted 5dBA higher than daytime sounds, in addition to the 10 dBA 10:00 p.m. to 7:00 a.m. weighting.

I. ENERGY

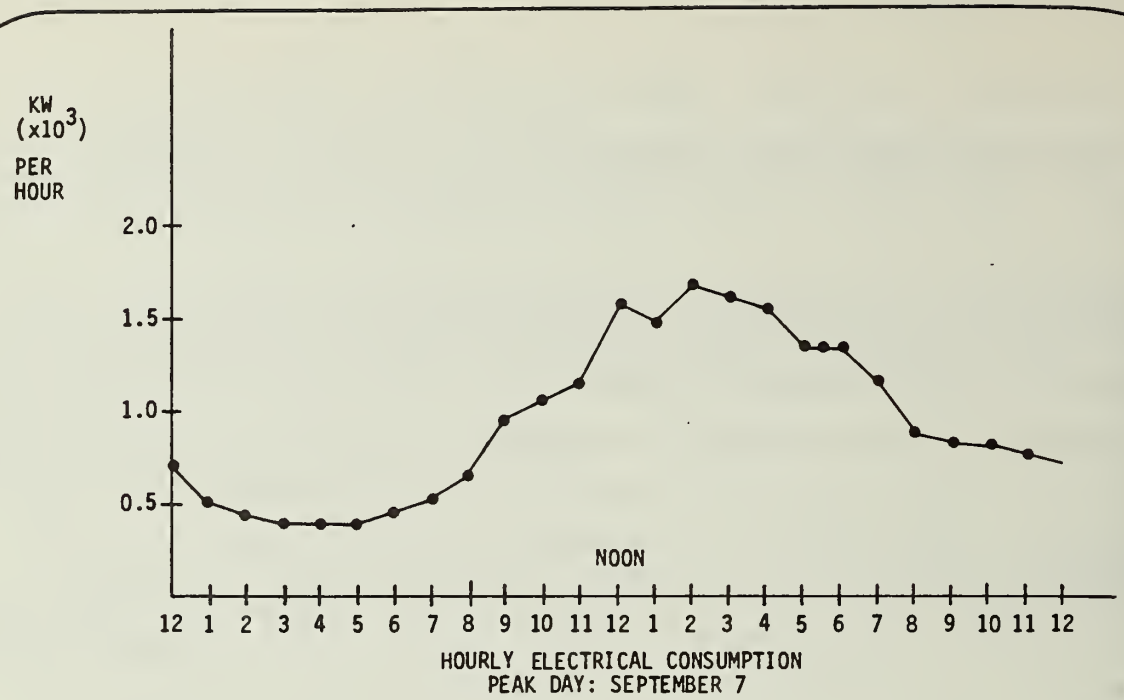
No street work would be required to provide gas or steam service to the proposed Tower No. 2./1/ PG&E could provide electricity and natural gas to the proposed project through its existing and available delivery systems. The company anticipates no difficulty in providing the project with complete service./1/ If the proposed Hilton Tower No. 2 were the only development in the vicinity, electrical capacity would be sufficient to serve the project./1/ To serve more than one of the three hotel projects which have been proposed in the area, capacity would need expansion from 12,000 volts to 34,000 volts. PG&E would lay conduit to the proposed sites from Substation Y at Eddy and Larkin Sts. Street work involving no more than one lane of traffic for five blocks on Eddy St. would take two to three weeks. Work would then move underground and be conducted through manholes.

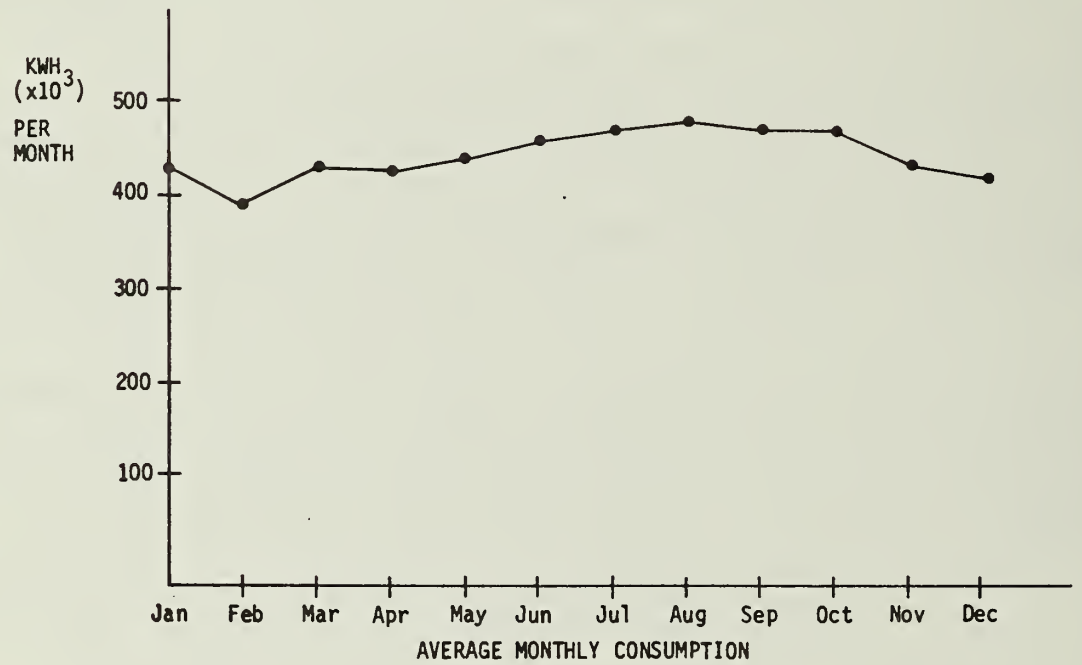
The project would require the energy equivalent of about 3,000 gallons of diesel fuel or about 0.5 billion British Thermal Units (BTU) - at source /2/) for excavation and hauling of earthen materials during foundation work. During construction, trucks and equipment are estimated to use about 80,000 gallons of fuel (or about 13 billion BTU - at source). The fabrication and delivery of construction materials, including 5,000 tons of steel, 25 tons of glass, 10,000 tons of concrete and 150 tons of aluminum would require about

4.6 trillion BTU - at source. Electrical energy use during construction is estimated to be about 185,000 kilowatt hours (or about 1.9 billion BTU - at source).

The structure would be designed to comply with the applicable State minimum-energy standards; the residential portion would comply with the residential building standards and the lobby, office and other public portions would conform to the nonresidential building standards. Steam purchased from PG&E's central steam distribution system would heat and meet the hot water needs of the project. PG&E burns natural gas to supply this steam so the anticipated demand for steam is reflected in the estimates of natural gas use. The design of the building's heating (and air conditioning) system takes into account the heat produced within the structure by lighting and by the building's occupants. Air conditioning would be provided by an electric chiller system with a capacity of 500 tons; the air-conditioning system would be equipped with electric resistance heaters to provide warmer guest room temperatures for those guests who found the conditioned air too cool. Installed lights, in corridors and in bathrooms would be primarily fluorescent lights. Some installed incandescent lights would be used. Portable lights in the rooms would be incandescent. Cooking facilities would use natural gas. Access to the upper floors would be provided by elevators run by electricity.

During operation, the project would require about 4.7 million kilowatt hours of electricity per year (48 billion BTU - at source), used primarily for ventilation and cooling./3/ This would be an average monthly consumption of about 390,000 kilowatt hours, or about 1.1 kilowatt hours per sq. ft. per month. The total is about the same amount of electricity as is used by 1,400 average residential customers in San Francisco. Daily and annual electric demand curves are shown in Figure 31. The annual electric demand curve is approximately level because the demand for ventilation and elevators would not vary a great deal from month to month. Peak consumption would be expected to occur at about 2:00 p.m. on about 7 September due to cooling and ventilation needs. This would not coincide with PG&E's system-wide peak demand period which occurs on August afternoons.





SOURCE: Robach, Inc.

FIGURE 31: ELECTRIC POWER CONSUMPTION PROFILES

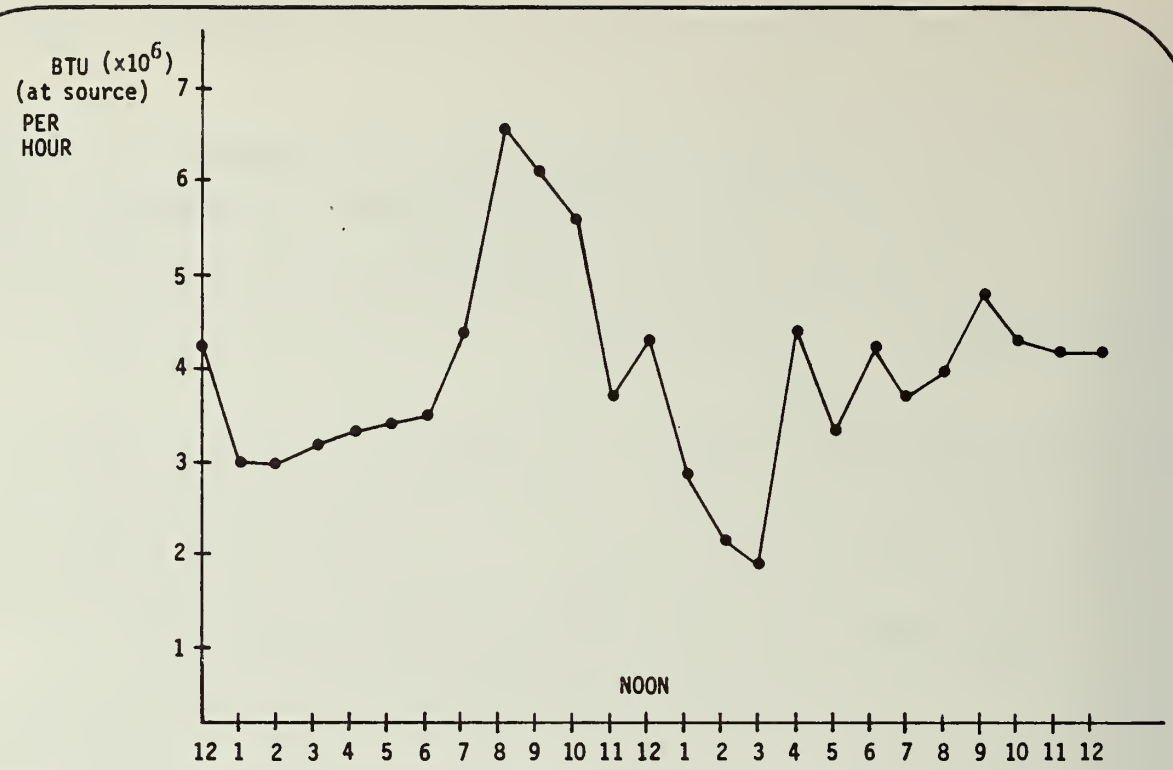
The occupants of the proposed Tower No. 2 would attend meetings and other functions in the existing hotel convention facilities; this would increase the demand for electricity in the existing hotel complex. This increased demand would amount to about 250,000 kilowatt hours per year (or about 2.6 billion BTU - at source).

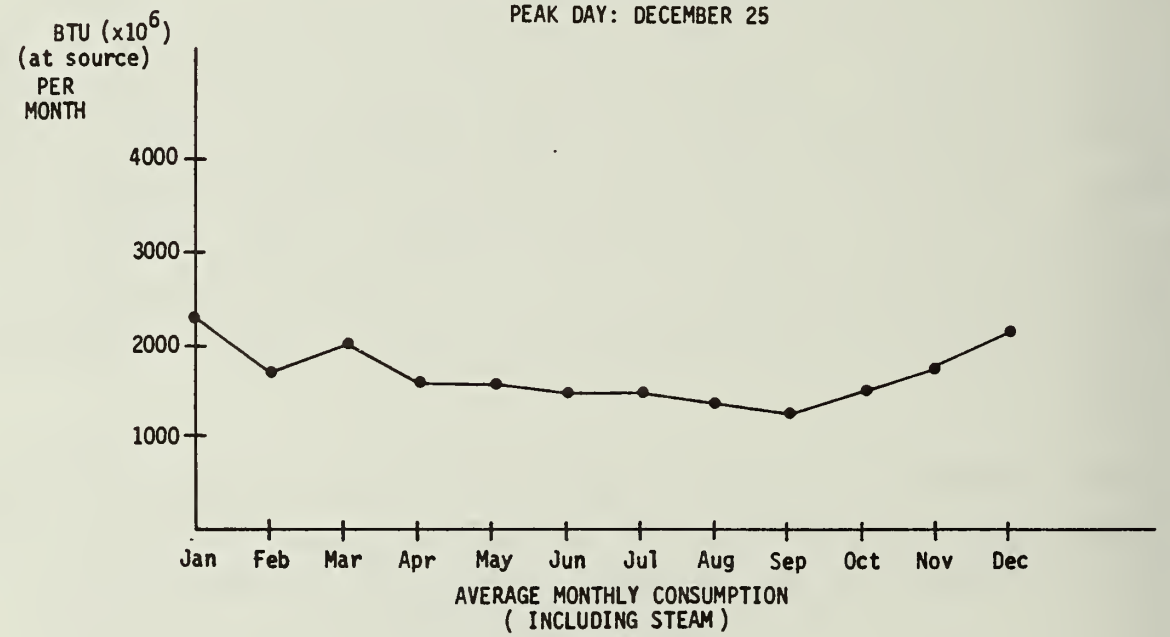
The project would require about 15 million cu. ft. of natural gas per year (21 billion BTU - at source), used primarily for the production of steam by PG&E for space heating and water heating. This would be about 160 BTUs per sq. ft. per day. This use by the project is about the same amount of natural gas as is used annually by 1,400 average residential customers in San Francisco. Daily and annual natural gas demand curves are shown in Figure 32, p. 146. Peak consumption of 6.6 million BTUs would be expected to occur between 8:00 a.m. and 9:00 a.m. on 25 December because the low anticipated occupancy would result in reduced heat available from people. This condition combined with cold exterior temperatures would increase space heating requirements. The peak demand for natural gas would not coincide with the PG&E system-wide peak demand which occurs in the early evening hours in January. The occupants of the proposed tower would increase the demand for natural gas in the existing hotel complex by eating in hotel restaurants and requiring more laundry and valet services. This increased demand would be about 6 million cubic feet of natural gas per year (or about 6.[illegible] billion BTU - at source).

Estimated automobile fuel use for traffic generated by the project would be 210,000 gallons of gasoline per year (about 30 billion BTU - at source). This use was estimated based upon the mix of vehicles expected in 1985. Actual vehicle fuel use is expected to decline until 1995 as the vehicle fleet becomes more efficient. Estimated diesel bus and truck fuel use would be about 64,000 gallons per year (or about 10 billion BTU - at source).

NOTES - Energy

/1/ L. Cordner, Engineering Office Representative, Pacific Gas and Electric Company, telephone communication, 7 February 1980.





SOURCE: Robach, Inc.

FIGURE 32: NATURAL GAS CONSUMPTION PROFILES

/2/ The "British Thermal Unit" (BTU) is a standard for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water 1 degree F. (251.98 calories) at sea level. The term 'at source' means that adjustments have been made in the calculation of the BTU energy equivalent to account for losses in energy which would occur during generation (production) and transmission (transport) of the various energy forms as specified in: ERCDC, 1977, Energy Conservation Design Manual for New Nonresidential Buildings, Energy Conservation and Development Commission, Sacramento, CA; and Apostolos, J.A., W.R. Shoemaker, and E.C., Shirley, 1978, Energy and Transportation Systems, Proj. #20-7 Task 8, California Department of Transportation, Sacramento, CA.

/3/ The energy use estimates for the new Tower and for the existing structures as a result of the new Tower are based upon a computerized model prepared by Robach, Inc., 1980, Report of Computer Energy Study, San Francisco Hilton, San Francisco, CA., Homewood, Ill.

J. GEOLOGY, SEISMICITY AND HYDROLOGY

GEOLOGY

Detailed foundation plans have not yet been developed for the project. However, it appears that the soil conditions are suitable for a shallow foundation, such as a structural mat or spread footing. These foundation types do not require the use of driven piles or piers for support of the structures. The available data indicate that the foundations should be designed for bearing pressures on the order of 10,000 lbs. per sq. ft. The actual bearing pressure would be determined by a detailed foundation investigation which would take into account the structural characteristics of the proposed building. The building would have a rigid steel frame. The floors would be composite with steel deck and concrete. The building structure would be designed to resist lateral forces due to high winds./1/

Maximum excavation depth on the site would be about 30 ft., with an average depth of approximately 15 ft. The dry sandy material which would form the excavation pit walls would probably collapse if unsupported, because of the weight of the overlying materials and the lack of cohesion in the layers of sandy material./1/

A shoring system would be necessary to support the excavation pit. Soldier piles and lagging would probably be installed along the portions of the excavation bounded by streets. The soldier pile and lagging support system has H-shaped cross section beams which are placed vertically at regular intervals along the excavation line, either by piledriving or by placement in spaced, predrilled holes. As earth material between the soldier beams is removed, wood beams (lagging) are placed between the soldier beams, forming a wall to retain the soil behind the excavation line. Existing buildings adjoin the site on two sides and have basements which may be deeper than the proposed excavation. The type of support system along these two sides of the site would depend on the specific excavation and basement depths./1/

Approximately 16,000 cubic yards of soil material would be removed from the site and probably disposed of at a private site near Candlestick Park in the southeast corner of San Francisco. The hauling would be done in 20-cubic-yard trucks./2/ The soil material removed during excavation would be fairly dry because it is above the groundwater level. The dry soil may create dust when moved or trucked out (see IV.G., p. 134). Some spillage of the excavated material along the haul routes would be expected, creating a safety hazard for vehicles, particularly bicyclists and motorcyclists./3/

SEISMICITY

The site would be subject to "very strong" groundshaking during an earthquake./4/ Detailed seismic design plans for the project have not been completed. The project would be designed according to the standards of the San Francisco Building Code, which require the building to withstand horizontal loads statically. The Uniform Building Code (UBC) standards would be followed when the UBC standards are stricter than those of the San Francisco Building Code. If necessary, a dynamic analysis of the proposed structure would be done by the structural engineer. This would determine any weaker portions of the structural design, which would then be revised and strengthened. Details of design would be determined by the project structural engineer in conjunction with the project geotechnical engineer./1/ The rigid

steel frame building and foundation would be designed to resist lateral forces associated with earthquake-induced groundshaking./5/

Groundshaking during an earthquake might damage the proposed building, but probably would not cause its collapse. The exterior of the building could be damaged and some glass might break or fall onto the sidewalks and streets.

Groundshaking could cause loose panel walls to fall and unattached objects or furniture to move or topple. Fires could be ignited within the building. Water mains and underground utility lines might break, leaving the building without outside water, power or telephone communication. Emergency water storage and a power generator would be incorporated into the building as required by the San Francisco Building Code.

HYDROLOGY

The project would cover the site with impervious surfacing. This would eliminate percolation of water into the soil and increase the amount of stormwater runoff from the site. The stormwater would be collected by the City of San Francisco combined storm drain and sewer system and would add incrementally to the flows in the system (see IV.D., p. 90).

The maximum excavation depth is expected to be about 30 ft. below the surface while the groundwater level is about 50 feet below ground surface. No dewatering would be expected during construction. No contamination of groundwater would be expected./3/ During construction, excavated material spilled on the streets by haul trucks could be a source of siltation in storm drains. Increased vehicular use of the site following project construction would add incrementally to the degradation of stormwater quality.

NOTES - Geology, Seismicity, and Hydrology

/1/ Lee and Praszker, 1980, Geotechnical Input for Environmental Impact Report Hilton Tower No. 2, San Francisco, California; and W. Taylor, Engineer, Martin, Cagley and Nishkian, telephone communication, 29 February 1980

/2/ J. E. Cahill, President, Cahill Construction Company, letter communication, 31 January 1980.

/3/ Lee and Praszker, 1980, op. cit.

/4/ URS / John A. Blume Associates, 1974, San Francisco Seismic Safety Investigation, prepared for the Department of City Planning.

/5/ W. Taylor, Engineer, Martin, Cagley and Nishkian, telephone communication, 29 February 1980.

K. ENDANGERED SPECIES

Since no rare nor endangered plant or animal species has been recorded or was observed to be present on the site, construction and operation of the project would not be expected to have an impact on any of them.

L. GROWTH INDUCEMENT

The project would add 410 hotel rooms and about 318,900 gross sq. ft. of new hotel space in San Francisco. The Hilton Tower No. 2 would represent a 3% increase in quality hotel rooms in the downtown San Francisco area and a 4% increase in hotel rooms in the Union Square downtown hotel district.

Tourism is a "basic industry"/1/; most of the income generated by tourism is from persons living outside of the area and is therefore net or new income to the City. The Hilton Tower No. 2 would increase tourism and stimulate the tourist industry in San Francisco by providing additional hotel rooms that would recapture business currently lost because of inadequate public meeting and exhibition space and the perceived undesireability of the location of the hotel. (The existing Hilton Hotel and Tower estimates that 27,100 and 14,500 room nights will be lost respectively, in 1980 and 1981 because of these factors) (see IV.E., p. 92).

The proposed Hilton Tower No. 2 would not contribute to an oversupply of San Francisco hotel rooms because projected hotel room demand indicates that

there would be sufficient demand to support 410 additional hotel rooms. Cumulatively, the project would not contribute to an oversupply of hotel rooms in the City because projected new room demand attributable to the George R. Moscone Center alone is estimated at 2,700 to 3,500 rooms./2/ Additional demand for hotel rooms by tourists (particularly foreign tourists), commercial travelers and other convention participants would require additional hotel rooms in excess of the approximately 2,600 hotel rooms currently proposed for construction and the estimated 2,500 to 2,800 rooms currently in the informal planning stage (see IV.E., p. 100)./3/

The Hilton Tower No. 2 would create about 150 permanent new jobs; all of these jobs would be a net increase in the employment base of San Francisco. To the extent that the project would attract new employees as well as visitors to the City, it may be viewed as employment-generating and growth-inducing, resulting in a variety of indirect growth effects. These effects could include additional demand for housing. Assuming, for worst-case analysis, that one of each three new jobs at the Hilton Tower No. 2 would result in the formation of a new household and that about 2/3 of these new households would want to live in San Francisco, new employment at the project site would create additional (indirect) demand for about 30 housing units. These 30 units would represent about 2% of the combined single-family and multi-family housing units for which building permits were issued in San Francisco in 1979./4/

As about 95% of the Hilton's employees are service, housekeeping, maintenance and clerical workers, almost all of this housing demand would be for low- and moderate-income units, which are in short supply in San Francisco. Employees who would not live in San Francisco would be expected to contribute to the demand for housing elsewhere in the region. The areas outside of the City which would be likely to provide low- and moderate-priced housing opportunities would be (1) in northeastern Contra Costa County, especially in Pittsburg and Antioch, and (2) in southern Alameda County, particularly in Fremont./5/

The proposed Hilton Tower No. 2 would require no new construction or extension of public service or utility systems and would occur in an already developed

downtown urban setting. It would, therefore, not require any infrastructural improvements that would open or intensify land development opportunities that do not already exist.

Indirect growth effects resulting from new residents that would be attributable to the Hilton Tower No. 2 include additional demands for a variety of commercial, social, medical, and municipal services. The Hilton Hotel has been operating in the Tenderloin since the 1960's; it is not expected, therefore, that the proposed 25% increase in the number of guest rooms would have a noticeable effect on commercial or residential rents or the character of the retail establishments in the community. However, it would contribute to the cumulative growth-inducing effects of the proposed Hotel Ramada and Holiday Inn development on the retail uses in the area of the Tenderloin near the hotel sites and the stimulation of residential hotel conversion to tourist hotel uses in this area. Cumulative hotel development could raise property values and, therefore, rents. The rehabilitation of residential hotels under the proposed UDAG program, should it be approved, would offset this effect somewhat and help maintain low-cost residences in the neighborhood.

NOTES - Growth Inducement

/1/ Tourism is a basic industry because it is a service provided to consumers who come from outside the local market. Since none of the other generally recognized basic industries (e.g. manufacturing, agricultural, and the extraction of natural resources) plays a significant role in San Francisco's economy, tourism is the City's leading source of income. Therefore San Francisco's economy is particularly sensitive to any stimulation of the tourist sector. (Security Pacific Bank, 30 September 1979, Northern Coastal Month Summary of Business Conditions.

/2/ The estimated demand of 2,700 rooms attributable to the George R. Moscone Center was obtained from: Laventhol and Horwath, 1 March 1979, Projected Hotel Tax Collections for San Francisco; the 3,500 figure was obtained from R. Sullivan, General Manager, San Francisco Convention and Visitors Bureau, telephone communication, 4 April 1980.

/3/ Hotels in addition to the Hilton Tower No. 2 currently being proposed for construction in downtown San Francisco include the 1,000-room Hotel Ramada, the 1,000-room Holiday Inn, and the 220-room Holiday Inn Civic Center Addition. Hotels currently known to be in the informal planning stage

include: a 600-room addition to the existing Sheraton Palace Hotel and two hotels in the Yerba Buena Center (700 rooms and 1,200 to 1,500 rooms).

/4/ Security Pacific Bank, 31 March 1980, Northern Coastal Monthly Summary of Business Conditions.

/5/ D. Morehead, Regional Relocation Director, Coldwell Banker, telephone communications, 25 July 1979.

M. COMMUNITY CONCERNS/1/

Tenderloin residents have held several meetings for the purpose of identifying community concerns about potential impacts of the three hotel developmets proposed in the northeastern Tenderloin./2/ At the first meeting on 23 July 1980, Gerald K. Owyang of the City's Office of Environmental Review presented the plans for the proposed hotels and listened to the comments and questions of local residents. After the meeting, the "Luxury Hotels Citizens Task Force" was formed to develop a list of potential impacts. A second meeting was held a week later which was sponsored by the two County Supervisors who represent the Tenderloin, Doris Ward and Ella Hill Hutch, in conjunction with the North of Market Planning Coalition, in order to familiarize the residents with plans for the proposed hotels and to acquaint the hotel project sponsors with community views and concerns. Residents had the opportunity to ask questions of representatives of the Hilton Tower No. 2 and Hotel Ramada project sponsors. James Johnson, Director of the Mayor's Office of Community Development, described the UDAG proposal.

Subsequent meetings have been held in the neighborhood with about 150 local residents actively participating. According to Richard Livingston, President of the North of Market Planning Coalition, the two major concerns are "displacement of residents due to conversion of residential hotels and rising rents from the increased land values, and transformation of the Tenderloin Neighborhood to a tourist-based economy."

Other concerns include possible increases in crime, traffic congestion, parking demand and population density; loss of commercial space and foot traffic on Ellis St; reduced open space; and construction impacts on senior

citizens residing in buildings near the sites. Bud Doane, Treasurer of the Central Branch YMCA and member of the North of Market Steering Committee, stated, "the Tenderloin has historically been exploited as a neighborhood, and the hotels are only part of the problem ... what is needed is a future comprehensive plan."

The North of Market Planning Coalition conducted a postcard survey to determine what the residents felt should be provided as mitigation measures. From 478 responses, the UDAG low-cost housing proposal received the highest positive response of 76%, increased security received 70%, and 63% thought low-cost meals should be provided. Based on this postcard survey and meetings of "Luxury Hotels Citizens Task Force," a list of suggested mitigation measures was prepared by the North of Market Planning Coalition./3/ A list of mitigation measures that have been agreed upon by the project sponsor is included in Section V, Table 32, p. 157.

Perceived positive effects of hotel development have also been mentioned by local residents. As Majorie Montelius, Secretary of Traveler's Aid of San Francisco and member of the North of Market Steering Committee, observed, "San Francisco needs tourists and the proposed hotels will provide jobs, revenues (to the City) and more customers for local businesses."

NOTES - Community Concerns

/1/ Persons contacted in the preparatin of this section include: B. Doane, Treasurer, Central Branch YMCA, telephone communication, 2 September 1980; R. Livingston, President, North of Market Planning Coalition, telephone communication, 28 August 1980; M. Montelius, Secretary, Traveler's Aid Society of San Francisco, telephone communication, 28 August 1980; W. Nunnally, Gray Panthers, telephone communication, 2 September 1980; Lynne Spear, Vice President, North of Market Health Council, telephone communication, 29 August 1980; and H. Stewart, Director, Senior Escorts and Outreach Program, telephone communication, 2 September 1980.

/2/ The North of Maket Planning Coalition is a group of Tenderloin residents, agencies, and businesspeople who are developing a comprehensive plan to preserve and improve the Tenderloin as a low-income residential neighborhood. The Coalition has received a grant from the San Francisco Foundation to develop this plan. During the past year, it has involved more than a thousand people in its planning process.

/3/ North of Market Planning Coalition, 30 July 1980, list of impacts and suggested mitigation measures distributed July 30, 1980 at a citizens' meeting. The list is available for public review at the Department of City Planning, Office of Environmental Review.

V. MITIGATION MEASURES PROPOSED TO MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT

In the processes of project planning, design and coordination, a number of measures have been identified that would reduce or eliminate the potential environmental effects of the proposed project. Most of these measures have been adopted by the project sponsors or are under consideration by their architects, builders, or other contractors. A few measures have been rejected. Each of these measures, and its status with respect to the proposed project, is discussed below. Where a measure has been rejected, the reasons for its rejection are also shown (see Table 32).

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
URBAN DESIGN AND VISUAL ASPECTS		
- Proposed facade lines and surface treatments would complement those of the existing Hilton Tower.	- Additional surface articulation, texture and detail could be provided at street and upper levels to complement the scale and texture of nearby older buildings and to help visually terminate the structure. A refined design is currently under consideration by the project sponsors and architects (see VII.D.).	- The upper levels of the Tower No. 2 could step back from O'Farrell St. and step up to the existing Hilton Tower to improve the visual transition among neighboring older buildings and the Hilton Complex. This was rejected by the project sponsor because the width of each guest-room floor is determined by guest-room module depth and corridor width, which cannot be varied sufficiently to provide a noticeable stepback.
- The intermediate height of the proposed Tower would provide a stepped transition in scale between existing structures on the Hilton block.		
- Proposed street trees, porte cochere and enclosed glass lobby on O'Farrell St. and retail display windows on Taylor St. would provide pedestrian amenity and interest.		
- The project sponsor would implement a comprehensive street tree planting and maintenance plan for entire block to help visually integrate the Hilton complex at street level. If desired by the City, any such planting program would be coordinated with development plans for adjacent hotel sites to help visually integrate the immediate visitor-serving area.		

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT (Continued)

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
CULTURAL AND HISTORIC RESOURCES		
- Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.		
WIND IMPACTS		
- The proposed project would provide street trees along Taylor St. and O'Farrell St. for local shelter for pedestrians from winds.		
- The rooftop tennis courts would be screened with 20 ft. high fencing to partially protect the courts from winds. The fencing would be designed to reduce its visibility from surrounding streets and structures.		

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT (Continued)

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
SECURITY IMPACTS		
- The existing camera monitoring system would be extended into the Tower No. 2. Additional security personnel would be provided.		
- The project sponsor would meet with the Crime Prevention Bureau of the Police Department to discuss further security measures.		
FIRE		
- The project design would incorporate fire protection measures required by the San Francisco Building Code. These would include a fire alarm system and an alarm monitoring station which would be equipped to indicate the time and location of a fire, to switch on emergency power sources, and control the elevators. Other requirements would be an automatic fire detection system, a voice communication system, ventilation for smoke control, a standby power generator, an on-site water supply and a sprinkler system on every floor.		
- The project sponsor would meet with the Fire Marshal to discuss the building design and proposed internal fire protection measures.		
WATER		
- Low-flow plumbing fixtures would be used to conserve water.		

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT (Continued)

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
SOLID WASTE		
- A trash compactor would be used to help reduce the need for landfill space.		
- The solid waste storage facilities would be designed to provide separate storage facilities for newspapers, glass, aluminum cans and other recyclable waste products.		
TRANSPORTATION, CIRCULATION AND PARKING		
- The project sponsor recognizes the need for expanded transportation services to meet the peak demand generated by cumulative development in downtown San Francisco and would participate in a Downtown Assessment District, or other fair and appropriate mechanism, to provide funds for maintaining and augmenting transit, in an amount proportionate to the demand created by the project, should such a funding mechanism be developed by the City.	- A pedestrian entrance to the lobby could be added on Taylor St. and used for all taxi loading, further reducing the possibility of blockage of the O'Farrell St. diamond lane by vehicles waiting to enter the porte cochere. This measure is under consideration by the project sponsor and architects (see VII.D.).	
- The project sponsor would encourage transit use by employees through the sale on-site of BART and Muni passes to employees, and encouraging an employee carpool and vanpool system in cooperation with RIDES for Bay Area Commuters.	- The project sponsor would be willing to participate on a proportional basis with other hotels proposed in the vicinity in a shuttle bus system between the Hilton Hotel and Moscone Center for use by hotel guests attending conventions at the Center, should such a shuttle bus system be desired by the City.	
- The project sponsor would implement a preferential-parking program for employee carpool and vanpool vehicles to encourage carpooling by employees.		

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT (Continued)

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
- Within a year from completion of the project, the Hilton Hotel would conduct a survey in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants, and actual pick-up and drop-off areas for carpoolers and vanpoolers. The results of this survey would be made available to the Department of City Planning.		
- Secure and safe bicycle parking facilities, would be provided in the existing parking garage adequate to meet the demand generated by project employees and guests.		
- Tour and charter bus loading and unloading would be moved from O'Farrell St. (a transit preferential street with an a.m. diamond lane and Muni stop) to Mason St.		
- Tour and charter buses would not load or unload in the proposed porte cochere, eliminating potential blockage of the O'Farrell St. diamond lane by waiting buses.		
- Taxis would queue on Taylor St. until summoned into the proposed porte cochere for loading by a light signal mounted on the building or by a whistle, reducing possible blockage of the O'Farrell St. diamond lane by waiting taxis.		
- Auto and taxi passengers' luggage would be handled in the porte cochere, removing the luggage from the main O'Farrell St. sidewalk where it would conflict with pedestrian travel.		

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT (Continued)

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
- The Hilton Hotel and Tower currently has staggered work hours assigned to provide service to hotel customers (bellpersons, stewards and laundry personnel, for example, work from 7:00 a.m. to 3:00 p.m.; maids work from 8:00 a.m. to 4:00 p.m.; and office workers work from 9:00 a.m. to 5:00 p.m.). This staggered work system would also apply to the new employees in the Tower No. 2, thus effectively reducing peaks on the transportation systems.		
AIR QUALITY		
- During excavation unpaved surfaces would be wetted with reclaimed water to hold down dust; if this were done twice a day with complete coverage, particulate emissions would be reduced about 50%.		
- Water-based or latex paints would be used on all interior drywalls painted by the general contractor or project sponsor, rather than oil-based paints which emit hydrocarbons while drying; this would reduce hydrocarbons from drying paint by about 60%.		
NOISE		
- To minimize disturbance of hotel guests in the neighborhood, construction activities would not commence until after 8:00 a.m.		
- To minimize construction noise, only muffled gasoline and diesel-powered construction equipment would be used. Equipment would be muffled to 80 dBA at 100 ft. in accordance with the San Francisco Noise Ordinance (Section 2097b).		

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT (Continued)

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
- Driving of soldier beams would be done in the shortest time period possible and would be limited to hours resulting in the least disturbance to neighborhood uses. - In accordance with the State Administration Code (Title 25), an acoustical analysis would be conducted by a qualified acoustical engineer to ensure that CNEL noise levels inside the guest rooms when windows are closed would not exceed 45 dBA. - The project sponsor intends to meet with the Bureau of Engineering and the Office of Environmental Review to explore other necessary and feasible measures to mitigate construction noise from driving of soldier beams which would be satisfactory to all parties. - The mechanical equipment in the building would be muffled to comply with the City Noise Ordinance, Section 2909.		
ENERGY The following measures taken together would effect a savings of energy in the existing hotel complex sufficient to provide about 1/2 the energy demand of the proposed Tower No. 2. - The air conditioning system for the new Tower No. 2 would be integrated with the existing system serving the existing hotel complex allowing a chiller cycling sequence in which each piece of equipment operates close to its optimal efficiency most of the time.	- The "waste heat" from the building's cooling and ventilation systems could be used to help supply heat for the existing swimming pool. The technical feasibility and cost effectiveness of this measure are currently being evaluated by the project sponsor and engineers.	

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT (Continued)

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
- The thermostats in the existing hotel complex would be replaced by "deadband" thermostats which would prevent the relatively rapid cycling back and forth between heating and cooling which now occurs at times. - The ventilation system would be modified (and repaired) to operate as an "economizer system" which uses outside air when it is of an appropriate temperature instead of recirculated air (recirculated air must be brought to the correct temperature by the building's heating and cooling system). Modifications would include reductions of air flows to two cubic ft. per minute per sq. ft. of conditioned space, the installation of a sensing device to determine the temperature of the outside air, and the installation of a control device (called a demand reset) which would control the flows of water in the heating/cooling coils in response to the actual demand in the room. - The kitchen exhaust air system would be altered so that each kitchen area has its own fan and the exhaust air flow would be reduced to balance with air supply. - The heating, ventilation and cooling system in the guest rooms of the main hotel building would be replaced with a more efficient system.		

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT (Continued)

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
GEOLOGY		
- Excavation pit walls would be shored up and protected from slumping or lateral movement of soils into the pit. A study would be done to determine the proper shoring system for the portions of the construction site adjacent to the existing buildings. The shoring system would be constructed in compliance with the excavation standards of the California Occupational Safety and Health Agency (Department of Industrial Relations).		
- The project sponsor would conduct a detailed foundation and structural design study for the building, and would follow the recommendations of both the structural engineer and the geotechnical consultant.		
- The general contractor would cover the loads of haul trucks carrying excavated material to reduce dust and potential spills on the streets.		
- O'Farrell and Taylor Sts. adjacent to the construction site would be swept so that silt would not be washed into storm drains and dust would be reduced.		
- The general contractor would confine construction equipment maintenance and refueling activities to areas of the site where petroleum spills could be contained.		
- The general contractor would construct wet or dry catch basins on the site to trap silt and debris, which could later be transported to dumps.		

TABLE 32: MITIGATION MEASURES PROPOSED TO MINIMIZE THE EFFECTS OF THE PROJECT (Continued)

MEASURES TO BE INCLUDED IN PROJECT	MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION	MEASURES REJECTED (AND REASONS FOR REJECTION)
SEISMICITY		
- The project would be designed and constructed in compliance with the recommendations of the structural engineers and in accordance with the most stringent standards of both the San Francisco and Uniform Building Codes.		
- All nonstructural building elements, such as hanging light fixtures, hung ceiling and wall partitions and mechanical equipment, would be firmly attached and anchored to walls and ceilings to reduce the possibility of their fall during an earthquake.		
- The project sponsor would develop emergency safety procedures to be followed by guests during an earthquake. A pamphlet describing the procedures would be placed in each guest room.		
- An emergency water supply and pumps would be provided as required by the San Francisco Building Code so that the sprinkler sytem would be more likely to be operable after an earthquake. This emergency measure would mitigate the potential hazard created by fires occurring at a time when the water supply may be cut off by earthquake damage to water mains.		

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

TRANSPORTATION

Construction hauling would temporarily increase traffic on access streets and haul routes, including O'Farrell St. which is a transit-preferential street. Project-generated traffic would increase traffic volumes on the surrounding local streets. The percent increases in project-generated traffic above the 1982 projected base traffic volumes would range from about 3% on Ellis St. to about 6% on O'Farrell and Mason Sts. during the peak hour.

AIR QUALITY

Construction activities would temporarily increase airborne dust in the project vicinity resulting in short-term violation of particulate emission standards. After completion, project-generated traffic, including tour buses and trucks, would increase emissions of air pollutants; attainment of air quality standards would be impeded.

NOISE

Construction noise would cause annoyance during daytime hours in neighboring buildings, including the existing Hilton Hotel and Tower and other residential structures in the vicinity of the site. Soldier beams would be driven for about two weeks.

ENERGY

During operation, the 410-room Hilton Tower No. 2 would require about 4.7 million kilowatt hours of electrical energy per year, generated predominantly from nonrenewable fossil fuels, and about 15 million cu. ft. of natural gas per year.

CUMULATIVE DEVELOPMENT

Construction of the project would contribute to the cumulative construction-related traffic, transit, noise and vibration, and air-quality impacts of hotel development proposed for the northeastern Tenderloin district. Operation of the project would contribute incrementally to the cumulative traffic, transit and air quality impacts and employee housing demand of hotel development proposed in the Tenderloin District. Cumulatively, the development of the Hilton Tower No. 2 along with the proposed Hotel Ramada and Holiday Inn would increase the visual density of development in the project area.

In the short run, cumulative hotel development could increase pressure for the conversion of residential hotels to tourist hotels in the Tenderloin district if the present conversion moratorium is removed in November 1980. In the long-run, hotel conversions would decrease when sufficient hotel rooms have been constructed to meet existing and projected hotel room demand. Cumulative hotel development could cause some local-serving businesses to be displaced by tourist-serving businesses, and raise land values in the vicinity of the hotel sites, contributing to increased residential and commercial rents.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

A. NO-PROJECT ALTERNATIVE

This alternative, as defined by the California Environmental Quality Act, would entail no change to the project site as it now exists. The vacant site would continue to return about $20,500 per year to the City and County in property taxes (increased at about 2% per year, unless sold) and return no income to the property owner. If there were no project, the traffic and transit conditions described as 1982 base conditions with cumulative development (see IV.F., pp. 120 - 132), and the air quality conditions resulting from this traffic on nearby streets would occur. Loading and unloading of guests and baggage from cars and taxis at the Hilton Hotel would continue to occur on the streets. Loading and unloading from charter and tour buses would continue on O'Farrell St., which is a transit-preferential street. No additional transit, traffic or pedestrian trips would be generated. Conditions described in the Environmental Setting sections of this report (III.A. through III.K. pp. 22-68) would generally continue. Demands for community services would remain unchanged. Neither permanent nor construction employment would be increased. There would be no increase in hotel, sales, payroll or franchise tax revenues accruing to the City and County from the site. Construction impacts attributable to the project, including noise, dust and truck traffic, would not occur. This alternative would preserve options for future hotel or other types of development at the site.

This alternative was rejected by the project sponsors because it would provide no opportunity to construct a Grand Lobby, porte cochere, and additional public space serving the Hilton Hotel complex. The possibility of another site was rejected for the same reasons. The no-project alternative would not provide any increase in public space and guest rooms at the Hilton Hotel to meet existing and anticipated demand.

B. ALTERNATIVE WITH THE TOWER SET BACK FROM O'FARRELL ST. AND ENTRANCE TO THE PORTE COCHERE FROM TAYLOR ST.

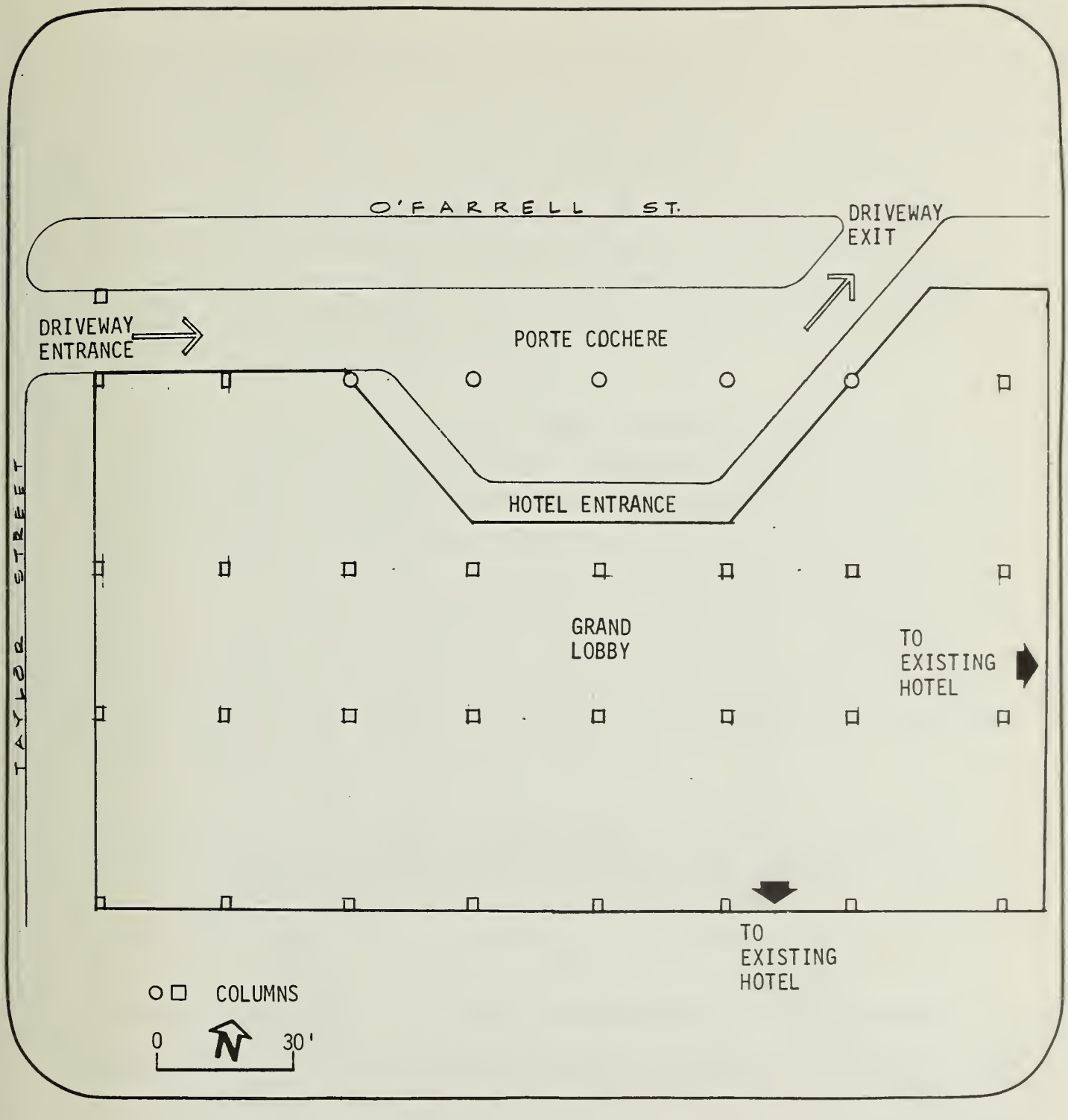
In this alternative, the proposed tower would be set back atop the base building by 10 ft. from the O'Farrell St. property line. The 10-ft. setback of the tower would require that the supporting columns be set back 10 ft.; the column-free area of the proposed ballroom on the third floor would be similarly reduced. The entrance to the porte cochere would be from Taylor St., rather than O'Farrell St. as is proposed in the project; the exit would remain on O'Farrell St. The Taylor St. entrance to the porte cochere would require a redesign of the floor plans in the base building because some of the exit stairways and the luggage handling area would have to be moved. The heights of the base building and tower and the floor areas and functions of the various floors are assumed to remain the same as for the proposed project (see Figure 33 and Figure 34, p. 172).

The visual, shadowing and urban design effects of the alternative would be similar to those of the proposed project. The setback on O'Farrell St. could be landscaped with hanging vines to provide visual relief from the windowless treatment of the third-floor facade.

Under northwesterly wind conditions, wind speed ratios on O'Farrell St. between Taylor and Mason Sts. would be about 5% to 10% lower with the alternative design than with the proposed project. Elsewhere around the project block, wind speed ratios would be similar to the proposed project.

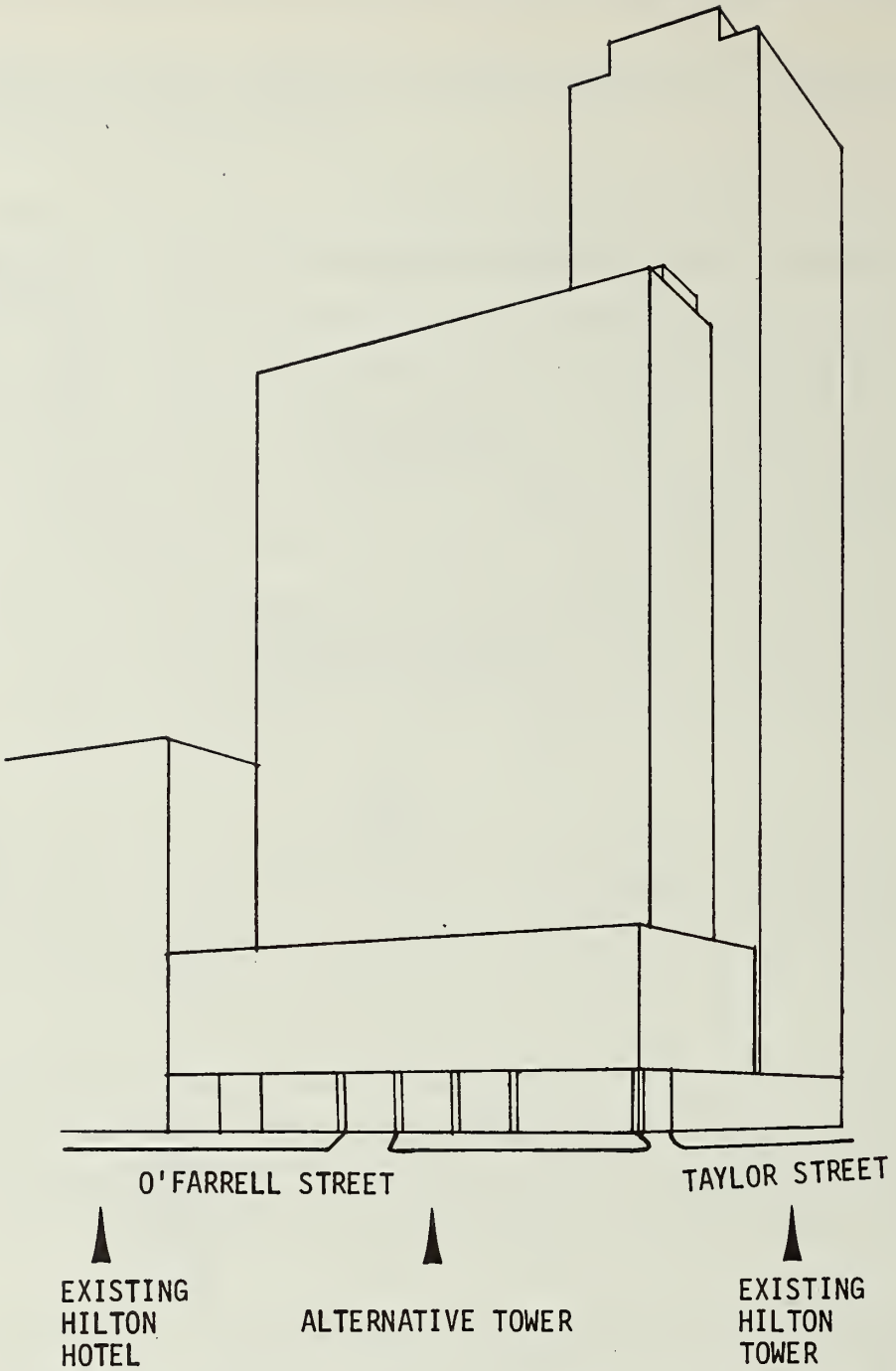
For west winds, the alternative design would also differ from the proposed project only along O'Farrell St. Near the O'Farrell and Taylor St. intersection, wind speed ratios would be lower at the southeast corner, while wind speed ratios adjacent and across from the site along O'Farrell St. would be doubled from the moderately low range to the moderately high range. Wind speed ratios for the rooftop area and the automobile entrance area would be similar to those of the proposed project.

As with the proposed project, about 150 persons would be employed in this alternative. The fair market value would be the same: an estimated



SOURCE: John Carl Warnecke
& Associates

FIGURE 33: TAYLOR ST.
PORTE COCHERE
ENTRANCE ALTERNATIVE -
SITE PLAN



SOURCE: John Carl Warnecke & Associates

FIGURE 34: TAYLOR ST. PORTE COCHERE ENTRANCE ALTERNATIVE - ISOMETRIC

$30 million with an assessed value of $7.5 million. The net addition to the San Francisco property tax base would be $7.1 million, the same as the proposed project. The composite property tax revenue to the City and County of San Francisco and the net increase over existing total composite tax revenue from the vacant site would be the same as the project. The increase in hotel, sales, payroll, and franchise tax revenues would be the same as for the project. Demands for community services and energy use would also be the same. Construction employment generated and construction impacts would be similar to those of the proposed project.

The Taylor St. access to the proposed porte cochere would allow private vehicles and taxis traveling northerly on Taylor St. to enter directly, without turning the corner on O'Farrell St. This would minimize interference with the diamond lane (Muni buses only) on O'Farrell St. The lane currently operates from 7:00 to 9:00 a.m. Without an entrance to the porte cochere on O'Farrell St., vehicles approaching the hotel eastbound on O'Farrell St. might occasionally make illegal right turns onto one-way Taylor St. to enter the porte cochere, thus avoiding the necessity of travelling around the entire project block to gain entrance. O'Farrell St. is a common access street for traffic coming to the hotel from U.S. Route 101.

The total daily and peak-hour vehicular, transit and pedestrian travel generated by this alternative design would be the same as for the proposed project. Tour and charter buses would load and unload on Mason St., and waiting taxis would queue on Taylor St. as in the proposed project.

The project sponsor has rejected the 10-ft. setback of the tower because it would require offsetting the structural columns by 10 ft., resulting in a loss of 10 ft. in depth in the column-free ballroom space on the third floor. The 10-ft. setback would also double winds on O'Farrell St. The project sponsor has not proposed a Taylor St. entrance to the porte cochere because space needed for portions of the Grand Lobby and luggage handling area, serving the entire hotel complex, would be lost, and the fire exit stairway pattern from the third floor ballroom and second floor multipurpose room would be disrupted, requiring re-design. To minimize possible blockage of O'Farrell St. by vehicles waiting to enter the porte cochere, the Hilton Hotel would not

permit tour and charter buses to load or unload or taxis to wait within the porte cochere.

C. ALTERNATIVE PROVIDING BOTH HOTEL AND APARTMENT HOUSING ACCOMMODATIONS

In this alternative, the height, the exterior and gross floor area of the building would remain the same as the proposed project. The base building would contain a porte cochere on O'Farrell St., Grand Lobby, and public space on the second and third floors as in the proposed design. The interior of the proposed tower would be modified so that Floors 5 through 9 would each contain twelve one-bedroom rental apartments, for a total of 60 apartments. Each apartment would contain about 610 sq. ft. and would rent for about $1,500 per month (1980 dollars). The remaining floors of the proposed tower would contain a total of 320 guest rooms. Separate elevators would serve the apartment floors.

Because the exterior design, building envelope and floor area of this alternative would be the same as for the proposed project, the urban design, visual, shadow and wind impacts would be the same. Water use would be about 10% less than with the project, from approximately 71,000 gallons per day to about 64,000 gallons per day. Wastewater would be similarly reduced. Solid waste generation would be about 25% less. Fire and police protection requirements would be similar to the proposed project. The alternative design would use an amount of natural gas and electricity similar to the proposed project.

This alternative would provide permanent employment for approximately 130 persons, rather than the estimated 150 persons under the proposed project. Affected employee categories would be those serving guest rooms directly, such as bellpersons, laundry and housekeeping staff. This design, providing 320 hotel rooms and 60 one-bedroom apartment units, would have an estimated total assessed value of about $32.5 million (1980 dollars), which is about 8% more than the $30.0 million fair market value of the proposed project. The estimated total assessed value would be $8.1 million, generating a net addition of $7.7 million to the San Francisco tax base (as compared to

$7.1 million in new revenues generated from the proposed project). Estimated total composite property tax revenues accruing to the City and County would be between $262,000 and $328,000 and the estimated net increase over existing property tax revenues would be between $245,000 and $310,000. Total and net composite property tax revenues accruing to the City and County would be about 3% more than revenues generated by the proposed project.

This alternative would provide 90 fewer hotel rooms and would generate about 25% less hotel room tax revenues to the City and County than the proposed project. Hotel-generated sales tax revenue would be expected to decrease about 25%, as there would be a 25% reduction in the number of rooms and guests staying at the hotel in this alternative. Residents of the 60 apartments would generate sales tax revenues to the City and County. Ninety fewer hotel guest rooms would be available to meet projected demands than with the proposed project.

Assuming that apartment residents would choose the hotel location because of its proximity to Union Square, the Downtown business district and related activities therein, private vehicle trips would be held to a minimum. At a daily vehicular trip-generation rate of about 2.4 trip ends per hotel guest room and about four trip ends per apartment, traffic generated by alternative would be similar to the proposed project. Because some of the residents would use transit to commute to and from work, approximately 50% more peak-hour trips on the Muni would be generated by the construction of 60 apartments on the project site.

Construction and cumulative hotel development effects would be similar to those of the project.

Hotel employees in this alternative would also generate a demand for about 30 housing units. Sixty upper-income apartment units would be provided to partially meet the need for housing in San Francisco.

The project sponsor has rejected an alternative providing both hotel and apartment housing accommodations for several reasons. The project sponsor states that, while Hilton Hotels Corporation does accommodate permanent

occupants at its hotels under special conditions, it does not consider itself to be an expert in the management and administration of residential apartment units. Another reason for rejection of this alternative by the project sponsor is that in order to realize a fair rate of return of its investment on the residential component of this alternative, each apartment unit would have rents of at least $1,500 (1980 dollars) per month. This would limit the demand for these units to a very specialized housing market which would have to have a minimum annual household income of $50,000. The project sponsor has been advised that investment in the five floors of residential apartments would be risky, as there is no demonstrated market demand for one-bedroom apartment units with monthly rents as high as $1,500. The project sponsor further states that the reduction of the number of guest rooms from 410 to 320 rooms would reduce the project's operating revenues while increasing construction costs per unit, and thus would not result in a sufficient rate of return.

D. ALTERNATIVE WITH A PEDESTRIAN ENTRANCE ON TAYLOR ST.

In response to comments made by City staff during the preparation of the Draft Environmental Impact Report, the original project design (see I., pp. 6 - 21) has been revised. As shown in Figure 35, the tower element has been visually strengthened so that it would relate more in character to the existing tower than would the proposed project and would be better incorporated into the formerly detached base building. The revised design would be clad with annodized aluminium panels, similar to the existing Tower; the spandrel panels would be of a cream color to provide a relationship with the colors of the original Hilton Hotel.

Windows would be added and the wall surface articulated at the second and third floors to break up the large expanses of aluminium cladding. The aluminium cladding would be extended to the base building between the lobby entrances.

The street-level facades on both O'Farrell and Taylor Sts. would be opened up with additional glazing and a new entrance to the lobby on Taylor St. (see

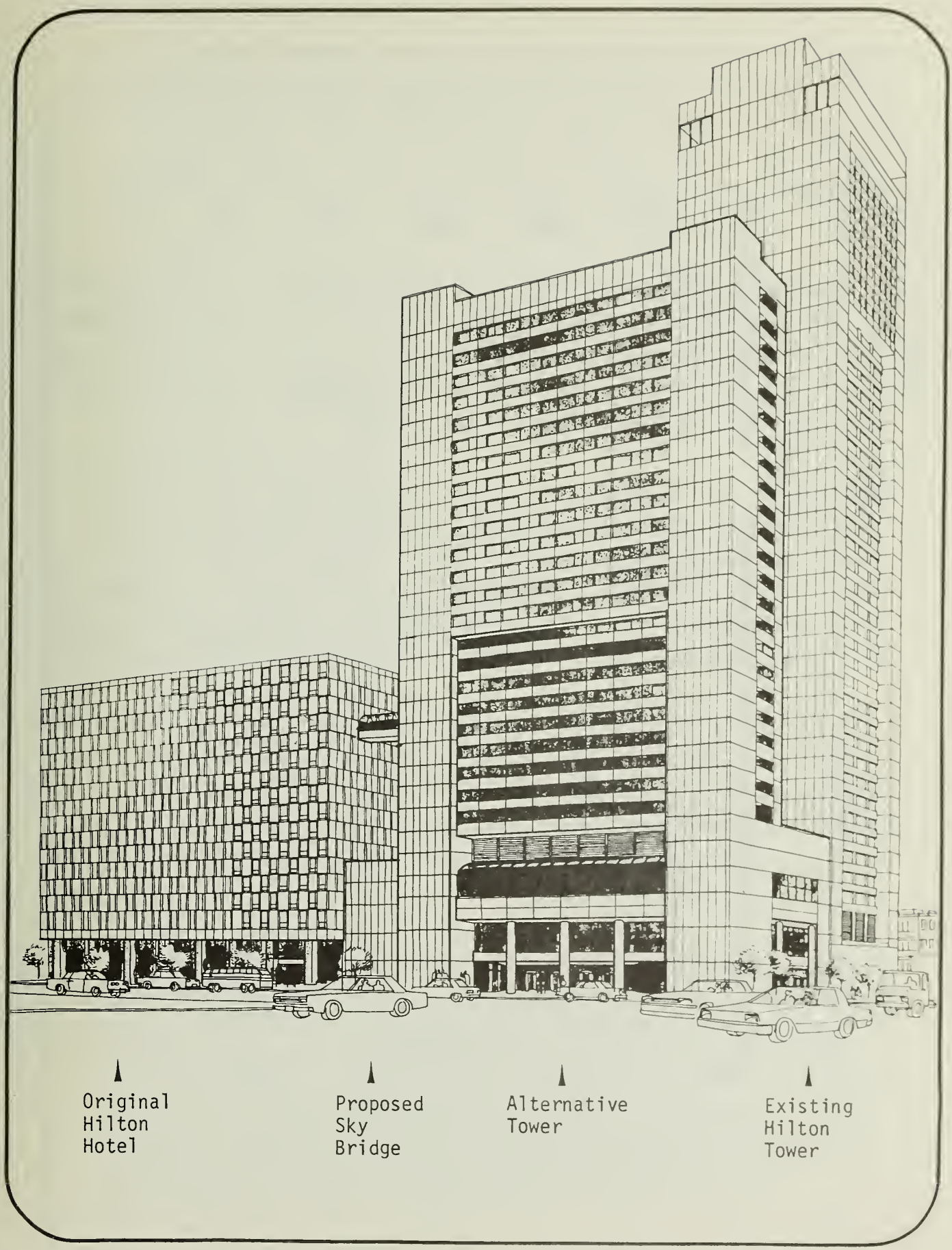


FIGURE 35: TAYLOR ST.PEDESTRIAN-ENTRANCE ALTERNATIVE - ARTIST'S RENDERING

Figure 36). The 30-ft.-high columns at the two entrances would be clad in brass. These revisions to the base building would make possible a more-open lobby with a two-story ceiling. The entrance on Taylor St. would replace the largely blank facade proposed by the project and would add informal surveillance of the sidewalk and street, as well as provide pedestrian interest.

The base building and tower would be the same heights as the proposed project and would contain approximately the same floor area. By reducing the number of suites, about 430 keyed guest-rooms would be provided, an increase of less than 5% over the 410 guest rooms proposed by the project. Shadowing and wind effects would be the same as those of the project.

Approximately the same number of employees would be required as for the proposed project. The fair market value, assessed value and property and payroll tax revenues would be about the same. Hotel, sales and franchise tax revenues would increase approximately 5%. Demands for community services and energy use would also increase approximately 5%. Construction impacts and construction employment would be similar to those of the project as proposed.

The Taylor St. entrance to hotel would be used to load taxis which would queue on Taylor St. This would limit traffic in the porte cochere to private passenger vehicles and unloading taxis, reducing possible interference of taxi operations with the Muni diamond lane, operating from 7:00 to 9:00 a.m., on O'Farrell St. The alternative porte cochere would be shallower than that of the proposed project.

Daily project-generated ridership on the Muni cable cars would be about 5% greater than the proposed project. Total daily traffic generation would be about 5% greater; this would be about five vehicle-trips more at peak hour. No changes in Levels of Service at any of the surrounding intersections would result.

This alternative is currently under consideration by the project sponsor.

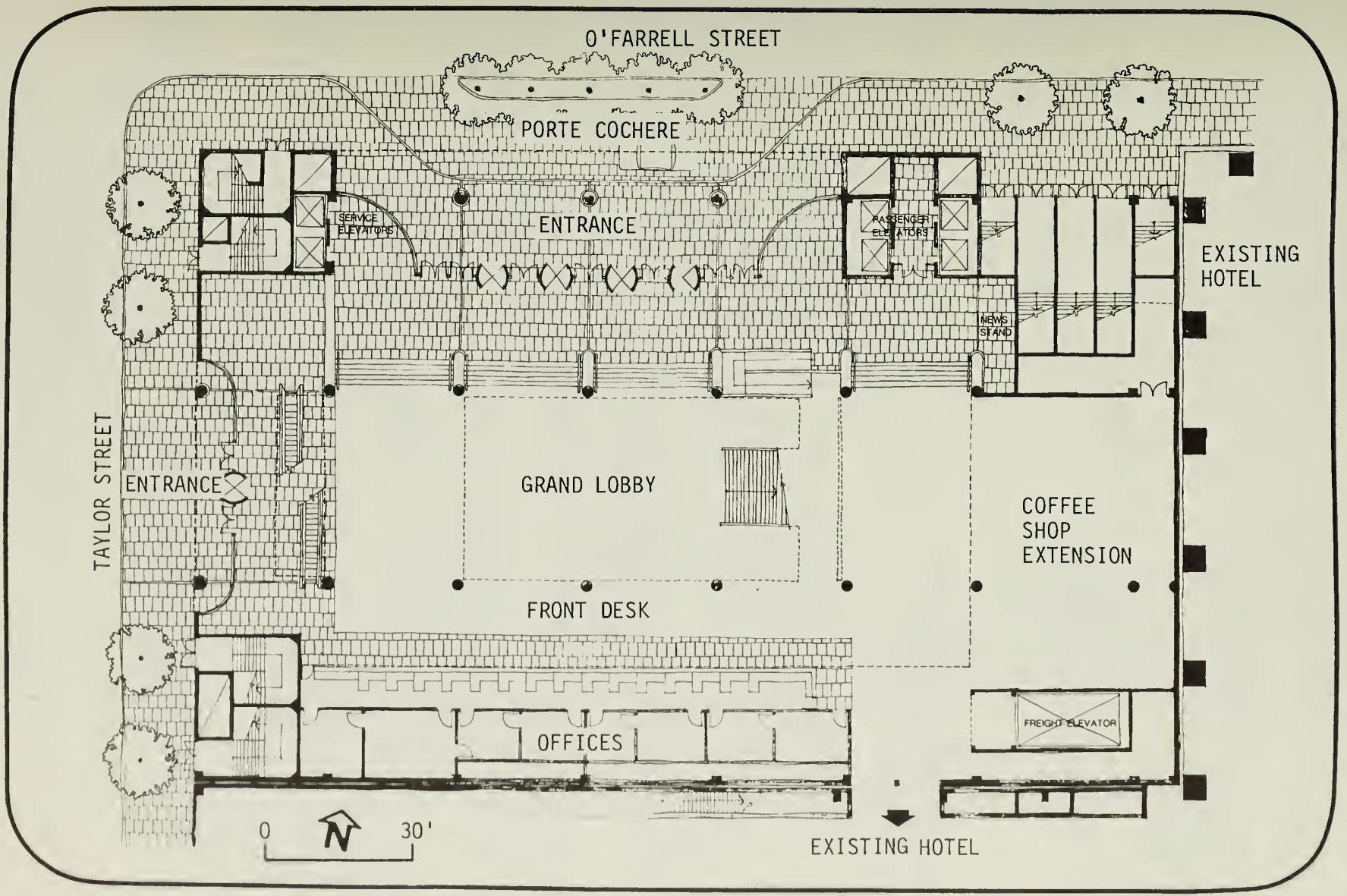


FIGURE 36: TAYLOR ST. PEDESTRIAN-ENTRANCE ALTERNATIVE - GROUND-FLOOR PLAN

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X. APPENDICES

APPENDIX A: APPLICABLE CRITERIA FOR PLANNED UNIT DEVELOPMENTS/1/

The City Planning Commission, under Section 304 of the City Planning Code, may authorize Planned Unit Developments as conditional uses. "After review of any proposed development, the City Planning Commission may authorize such development as submitted or may modify, alter, adjust or amend the plan before authorization, and in authorizing it may prescribe other conditions as provided in Section 303(d). The development as authorized shall be subject to all conditions so imposed and shall be excepted from other provisions of this Code only to the extent specified in the authorization." The San Francisco City Planning Code sets forth the criteria and limitations a project proposed as a Planned Unit Development must meet in addition to the criteria applicable to conditional uses (Section 303c). The proposed development must:

"1. Affirmatively promote applicable objectives and policies of the Master Plan;

"3. Provide open space usable by the occupants and, where appropriate, by the general public, at least equal to the open spaces required by this Code;

"6. Under no circumstances be excepted from any height limit established by Article 2.5 of this Code, unless such exception is explicitly authorized by the terms of this Code. In the absence of such an explicit authorization, exceptions from the provisions of this Code with respect to height shall be confined to minor deviations from the provisions for measurement of height in Sections 260 and 261 of this Code, and no such deviation shall depart from the purposes or intent of those sections."

In addition, Planned Unit Developments must be "on sites of considerable size (1/2 acre or more), developed as integrated units and designed to produce an environment of stable and desirable character which will benefit the occupants, the neighborhood and the city as a whole. In cases of outstanding over-all design, complementary to the design and values of the surrounding area, such a project may merit a well reasoned modification of certain of the provisions contained elsewhere in this Code. The tract or parcel of land involved must be . . . in one ownership . . . ."

NOTE - Appendix A

/1/ City and County of San Francisco, 1979, City Planning Code, Article 3, Section 304.

APPENDIX B: ARCHITECTURAL EVALUATION SYSTEMS

The architectural ratings discussed in the text of this report (see Section III.B., p. 31; and Figure 16, p. 32) represent the results of two separate architectural surveys.

SAN FRANCISCO DEPARTMENT OF CITY PLANNING SURVEY

Between 1974 and 1976, the San Francisco Department of City Planning conducted a citywide inventory of architecturally significant buildings. An advisory review committee of architects and architectural historians assisted in the final determination of ratings for the 10,000 buildings which were entered in an unpublished 60-volume record of the inventory. The rated buildings have been represented on a set of color-coded maps which identify the location and relative significance of each building surveyed. The maps are available for public inspection at the Department of City Planning.

The inventory assessed the architectural significance of the surveyed structures from the standpoint of overall design and particular deisgn features. Both contemporary and older buildings were included, but historical associations were not considered. Each building was numerically rated according to its overall architectural significance. The ratings ranged from a low of "0" to a high of "5". Factors considered included architectural significance, urban design context, and overall environmental significance. The architectural survey resulted in a listing of the best 10% of San Francisco's buildings. In the estimation of the inventory participants, buildings rated "3" or better represent approximately the best 2% of the City's architecture.

HERITAGE SURVEY

More recently, the Foundation for San Francisco's Architectural Heritage, through its consultants, Charles Hall Page & Associates, Inc., conducted an architectural and historical survey of all Downtown structures. In 1979, the inventory results were published in the book Splendid Survivors. Criteria considered in rating the buildings included Architectural Significance, Historical/Cultural Significance, Environmental Significance and Negative Alterations. Summary ratings from "A" to "D" were then assigned to each building on the basis of these scores. The summary ratings indicate the following:

A. Highest Importance. Individually, these buildings are the most important buildings in downtown San Francisco. All "A" group buildings are eligible for the National Register and are of highest priority for City Landmark status.

B. Major Importance. This group includes buildings which are of individual importance by virtue of architectural, historical, and environmental criteria. "B" group buildings are eligible for the National Register and are of secondary priority for City Landmark status.

C. Contextual Importance. Buildings which are distinguished by their scale, materials, compositional treatment, cornice and other features are included in this group. Many "C" group buildings may be eligible for the National Register as part of historic districts.

D. Minor or No Importance. Buildings in this group are insignificant examples of architecture. Most "D" group buildings are "sites of opportunity" for development.

STRUCTURES OF MERIT

Recognition of structures of merit is provided for under Section 1011 of Article 10 of the City Planning Code, which authorizes the City Planning Commission to approve a list of structures that have historical and architectural merit, but have not been designated as landmarks. The purpose of such a list is to encourage preservation of structures of architectural and historic merit without subjecting them to the controls imposed on designated landmarks.

In May 1978, the Planning Commission directed the Landmarks Preservation Advisory Board to prepare a list of potential Structures of Merit for the Commission to consider. The Landmarks Board presented a list in September of the best 300 buildings in the Downtown area, including all buildings rated A or B in the Heritage survey, Splendid Survivors, and any other buildings given high ratings in the Department of City Planning 1976 Architectural Inventory. The Planning Commission held two public hearings, in September 1979 and January 1980, to consider designation of Structures of Merit, and adopted the Listing of Architecturally and/or Historically Important Buildings on 29 May 1980 (Resolution 8600). Structures on this list are indicated by double asterisks in Figure 16, p. 32.

I. INTRODUCTION

Architects, engineers, and city planners designing urban structures are limited by the lack of information on wind effects due to structures, such as pedestrian discomfort and wind-caused mechanical problems with doors, windows, and ventilating systems. Once a structure is built, remedial measures (if they exist at all) usually are expensive.

It is virtually impossible to anticipate, by analysis or intuition, the winds that will be caused by a structure, as they are determined by complex interactions of forces. Fortunately it is possible to predict the wind patterns and pressures around structures by testing scale models in a wind tunnel which can simulate natural winds near the ground. This allows the designer to foresee possible environmental and mechanical problems and alleviate them before the building is erected.

Data from wind tunnel tests can be combined with climatological data in analysis of the effect of a proposed structure on pedestrians in terms of human comfort. The frequency distribution of wind strengths at pedestrian level, combined with temperature data and shadow patterns of the proposed structure and its surroundings, can be used to forecast comfort at pedestrian levels.

II. SUMMARY

Wind tunnel tests of scale models of the project site as it exists and with the proposed building and its alternative were conducted in a boundary layer wind tunnel. Measurements were made of windspeed ratio and direction for the two most prevalent wind direction in San Francisco, northwest and west.

For northwest winds, windspeed ratio ranged from light to moderate near the site. High winds were found at the east side of the O'Farrell/Mason intersection and the north side of the Ellis/Taylor intersection. Wind direction was variable over most the area studied due to the disturbing effect of existing buildings.

For west winds, low to moderate winds were found along O'Farrell Street. Moderately strong winds generated by the existing Hilton Tower I affected Taylor Street, Ellis Street, and the Ellis/Taylor intersection. Elsewhere, winds were light to moderate. Wind flows were again disturbed, particularly near the Hilton Tower I.

The proposed building was found to increase northwest winds by less than 10% along O'Farrell near the project. A mixed pattern of wind increases and decreases would occur at the O'Farrell/Mason intersection. It appears that the proposed tower would shift some winds generated by the Hilton Tower I to rooftop levels, as winds would be diminished along Taylor Street and at the Ellis/Taylor intersection.

The project would increase west winds along O'Farrell Street by 5-20%, but the effect would not extend to the O'Farrell/Mason intersection. Increases would occur along Taylor Street and decreases would occur along Mason Street. Changes would be less than 5% elsewhere.

Outdoor areas within the proposed site include an automobile entrance/exit and rooftop tennis courts. The automobile entrance was found to have light winds. The tennis courts were found to have moderately high to high winds.

Suggested mitigation measures to reduce winds include provision of street trees, kiosks, etc. Shelter for the rooftop tennis courts would be necessary.

Unavoidable adverse effects of the proposal would be wind increases of 5-20% along O'Farrell Street near Taylor Street and an increase in moderately high winds on the east side of the O'Farrell/Mason intersection for northwest winds.

III. BUILDING AND SITE DESCRIPTION

The proposed Hilton Tower II would be located at the southeast corner of O'Farrell and Taylor Streets in San Francisco. It would be part of the Hilton complex that occupies the entire block bounded by O'Farrell, Mason, Ellis, and Taylor Streets. The new tower would be 320 feet tall, and would be built on top of a lowrise base. An automobile entrance/exit would be located on O'Farrell Street. A bridge would connect the tower with the main Hilton Hotel building to the east. The Hilton Hotel Tower I is located south of the proposed building at the Taylor/Ellis intersection. The rooftop of the lowrise base between Tower II and Tower I would be outdoor space to be used for tennis courts.

An alternative design was selected for testing. The tower in this alternative would be set back 10 feet from the O'Farrell Street frontage. The automobile entrance in this alternative would be on Taylor Street, with the exit off O'Farrell Street.

IV. MODEL AND WIND TUNNEL FACILITIES

Model

Scale models of the proposed buildings and the structures surrounding the area for a distance of several blocks were

constructed of polystyrene and urethane foams at a scale of 1 inch equals 30 feet. Building configurations and heights were obtained from the Sanborn maps at the San Francisco Department of City Planning and from site visits.

Wind Tunnel Facilities

The Environmental Impact Planning Corporation boundary layer wind tunnel was designed specifically for testing architectural models. The working section is 7 feet wide, 43 feet long, and 5 feet high. Wind velocities in the tunnel can be varied from 3.5 mph to 13 mph. The flow characteristics around sharp-edged objects, such as architectural models, are constant over the entire speed range. Low speeds are used for tracer smoke, high speeds for windspeed measurements.

Simulation of the characteristics of the natural wind is facilitated by an arrangement of turbulence generators and roughness upwind of the test section. These allow adjustments in wind characteristics to provide for different scale models and varying terrain upwind of the project site.

Measurements of windspeed around the model are made with a hotwire anemometer, a device that relates the cooling effect of the wind on a heated wire to the actual windspeed. The flow above the city is measured by a Pitot tube connected to a micromanometer. The Pitot tube and micromanometer measure directly the pressure difference between moving and still air. This pressure difference is then related to the actual windspeed. Flow visualization is achieved by use of floodlit smoke.

V. TESTING METHODOLOGY

Simulation of Flow

The most important factors in ensuring similarity between flow around a model in a wind tunnel and flow around the actual building are the structure of the approach flow and the geometric similarity between the model and the prototype. A theoretical discussion of the exact criteria for similarity is not included in this paper, but may be found elsewhere (Cermak, 1966, or Cermak and Arya, 1970)

The variation of windspeed with height (wind profile) was adjusted for the scale of the model and the type of terrain upwind of the the site. The profiles used were those generally accepted as adequately describing the flow over that type of terrain (Lloyd, 1967).

Testing Procedure

The windflow characteristics of the site in its current state were investigated to ascertain the present wind environment.

Windspeeds and wind directions at specified points throughout the site were measured and recorded. Wind direction was measured by releasing smoke at each point and recording the direction in which the smoke traveled. Windspeed measurements were made at the same points, at a scale height of 5 feet above the ground. A hotwire anemometer probe is required to make these measurements within a fraction of an inch of the model surfaces. The probe is repeatedly calibrated against the absolute reading of a Pitot tube and micromanometer. Velocity readings close to the model are generally accurate to within 10% of the true velocity.

Measurements for the building are made by keeping the probe in place while replacing the existing buildings with each proposal under consideration.

Before and after each test run, a calibration measurement was made above the model. The purpose of these measurements was to relate the wind tunnel measurements to actual wind records from U.S. Weather Service wind instrumentation located on the Federal Building at 50 Fulton Street.

VI. TEST RESULTS AND DISCUSSION

Tests of windspeed and wind direction were conducted for 2 wind directions.

Measured windspeeds are expressed as percentages of the calibration windspeed, which corresponds to the actual windspeed at the San Francisco Weather Station. Thus, a plotted value of 52 means that the measured windspeed is expected to be 52% of the windspeed recorded by the Weather Service when winds are from that particular direction.

The plotted values can be interpreted in terms of general "windiness" using the scale below. This scale is subjective and is based on information gathered from similar studies in San Francisco.

Velocity	Decimal Fraction of Calibration Windspeed
Low	0-0.19
Moderately low	0.20-0.29
Moderate	0.30-0.49
Moderately high	0.50-0.69
High	0.70-1.00
Very high	>1.00

>greater than

The plotted values are not actual windspeeds, but ratios. Thus, a point having a "very high" windspeed ratio would still experience light winds on a near-calm day. Likewise, a point found to have "low" winds could experience significant winds on a windy day.

Wind direction is indicated by an arrow pointing in the direction of flow. Where wind direction fluctuated, two arrows representing the principal flow directions were plotted.

Areas of fluctuating winds are normally turbulent, as are areas of spiraling motion; the latter are denoted by curved arrows.

Northwest Wind

Northwest winds occur 12 to 39% of the time in San Francisco, depending on the season. (In meteorology, a northwest wind blows from the northwest). Northwesterly and westerly winds are the most frequent and the strongest winds at all seasons in San Francisco. Northwest winds exceed 13 miles per hour 35% of the time and 25 miles per hour 3% of the time in summer. (These windspeed categories are used because wind frequency data are broken down into categories of 4-13 mph, etc.) Wind frequencies and speeds are lower in spring, fall, and winter.

Figure 1 shows measured windspeed ratio and direction for the existing site under northwest wind conditions. Windspeed ratios along O'Farrell Street range from low to moderate near Taylor Street and the site. Moderately high to high winds occur at the east side of the O'Farrell/Mason intersection. Windspeed ratios are moderate along Taylor adjacent the project. Along Mason Street between O'Farrell and Ellis Streets, winds are moderate on the west side and high along the east side. Windspeed ratios at the Taylor/Ellis intersection range from moderate to high. Windspeed ratios are low to moderate near the Mason/Ellis intersection.

Test results for the proposed project are shown in Figure 2. Windspeed ratios at the O'Farrell/Taylor intersection generally would remain unchanged. Reduction in wind would occur at the northwest, northeast and southeast corners of the O'Farrell/Mason intersection; windspeed ratios would increase at the southwest corner. Reductions in wind would occur along both Taylor and Mason Streets. Windspeed ratios at the east side of the Ellis/Mason intersection would increase from moderately low to moderate. The proposed rooftop tennis courts would have moderately high windspeed ratios. The automobile entrance/exit on O'Farrell Street would have light windspeed ratios.

The major impacts differences between the alternative and the project would occur along O'Farrell Street. Between Taylor

and Mason Streets, windspeed ratios would be 5-10% lower with the alternative. Elsewhere, windspeed ratios would be similar to those for the proposed project.

West Wind

West winds occur between 15 and 40% of the time, depending on the season. They exceed 13 miles per hour 29% of the time and 25 miles per hour 7% of the time in summer. Wind strengths and frequencies are somewhat lower in spring, fall and winter.

The existing site under west wind conditions is shown in Figure 4 O'Farrell Street generally has moderate to moderately high windspeed ratios with the strongest windspeed ratios at the northeast corner of the O'Farrell/Mason intersection. The effect of the Hilton Tower I is seen along Taylor Street between O'Farrell and Ellis Streets, with moderately high to high windspeed ratios occurring. The Ellis/Mason Street intersection has moderately low to moderate windspeed ratios.

The proposed project (Figure 5) would cause both increases and decreases in windspeed ratios along O'Farrell Street, with windspeed ratios the same basic range of strength. Diversion of wind by the proposed tower would cause decreases in windspeed ratios along both Taylor and Mason Streets between O'Farrell and Ellis. Windspeed ratios along Ellis Street would remain generally unchanged. The rooftop tennis courts would have high windspeed ratios, while the automobile entrance would have low windspeed ratios.

The alternative project (Figure 6) would have impacts differing from the proposed project only along O'Farrell Street. The major difference would occur near the O'Farrell/Taylor intersection, where windspeed ratios at the southeast corner would be lower, while windspeed ratios adjacent and across from the site along O'Farrell Street would be doubled. Windspeed ratios for the rooftop area and the automobile entrance area would be similar to those of the proposed project.

VII. MITIGATION MEASURES

There are 2 types of mitigating measures for wind. The first is to make major design changes to reduce winds near the project, su as different building orientations or changes in size or shape.

The second type of mitigation measure involves additions to the project that would provide local shelter for pedestrians. Small structures such as kiosks for newspaper or flower vendors, telephone booths, and shelters at bus stops can serve in this way. Similarly, street trees and other vegetation can function as windbreaks. These types of measures would be appropriate along Taylor Street and in front of the project.

The moderately high to high winds in the outdoor area to be used for tennis courts indicate that wind shelter would be necessary to make the area usable. Fencing and screening to shelter the courts would be necessary. Even with these measures, winds may still affect tennis games adversely.

The automobile entrance would be sheltered and would require no wind control measures.

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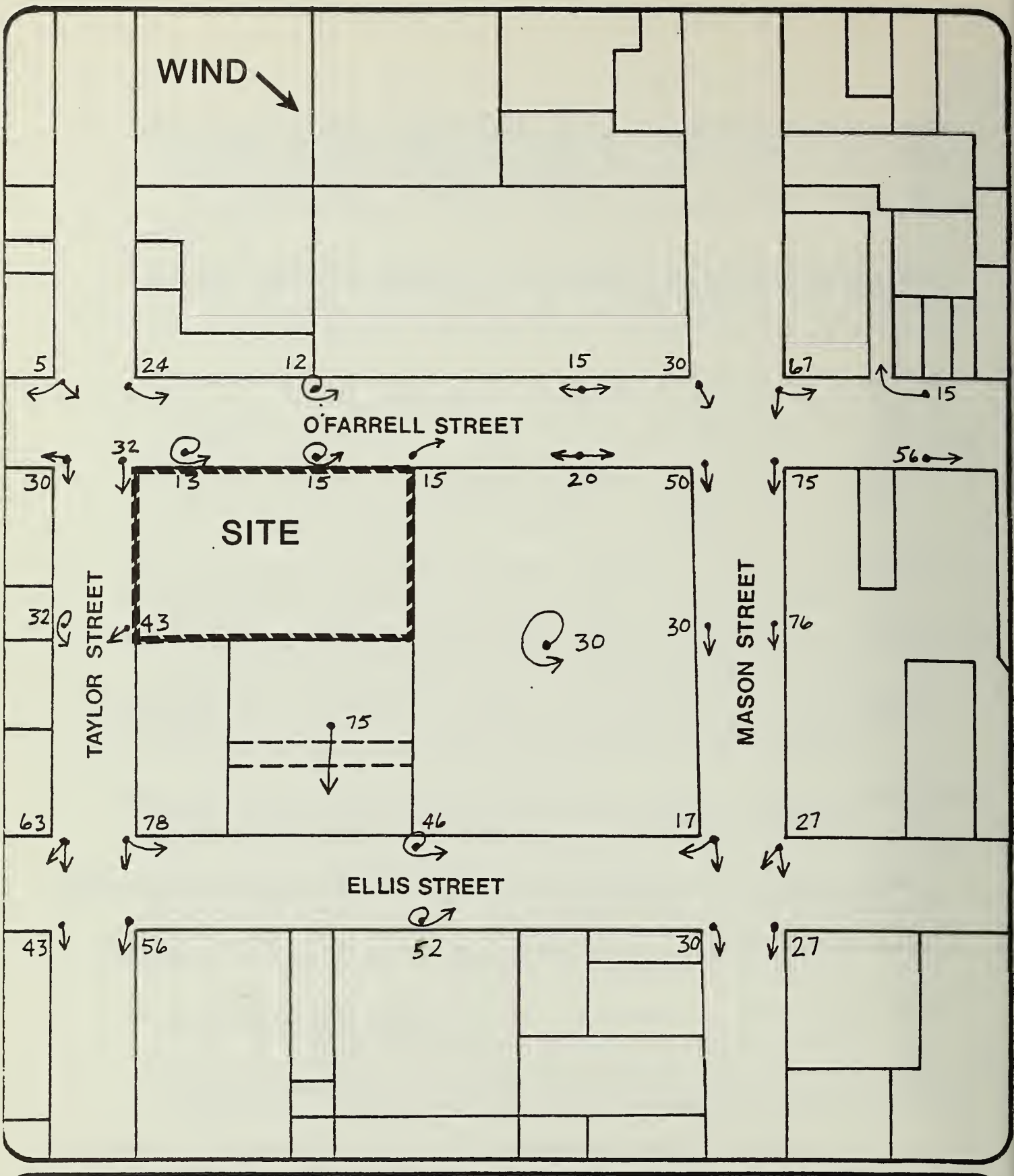


Existing Site Northwest Winds

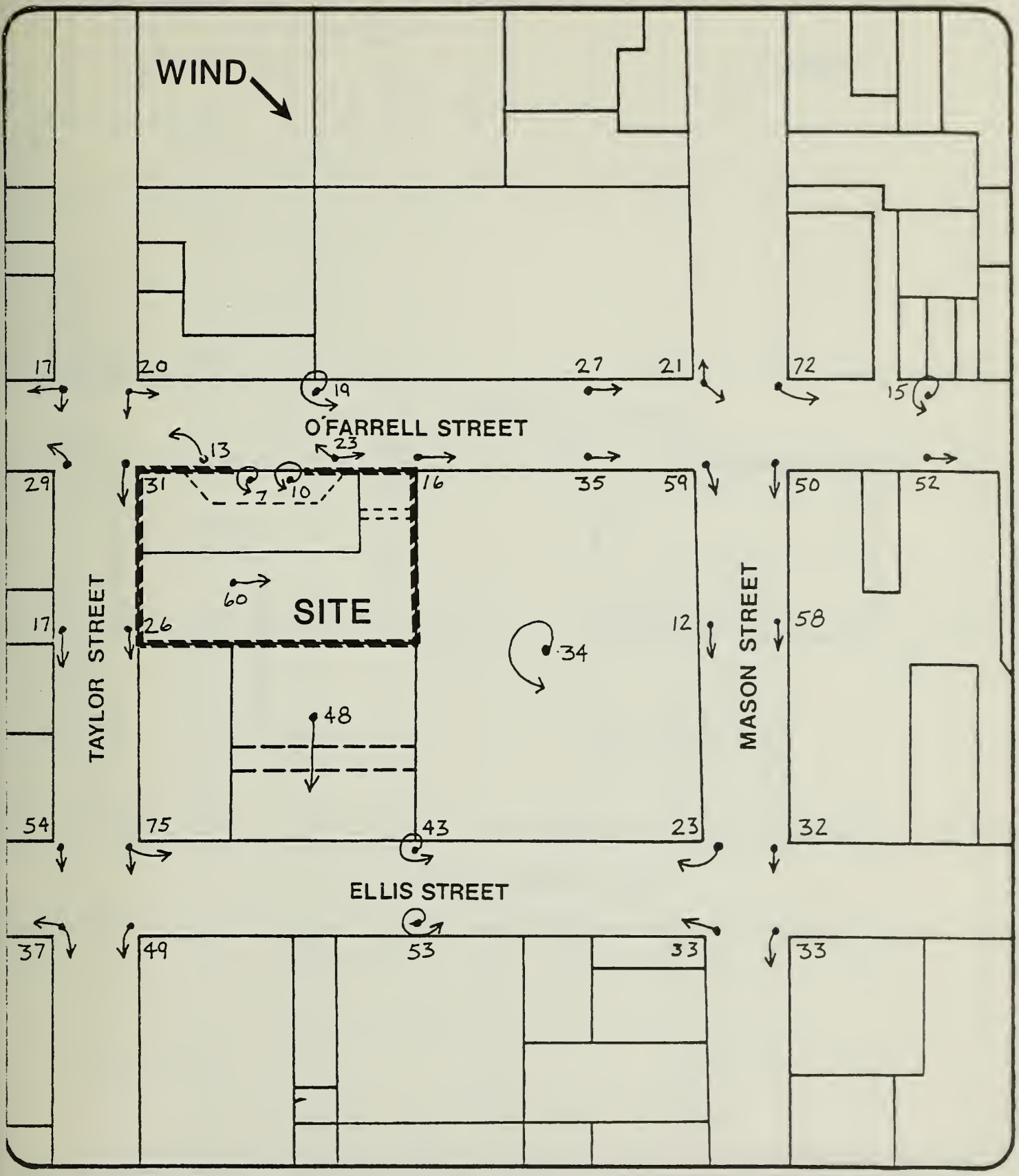
LEGEND

58 - Wind Speed Ratio at Monitoring Location

- Wind Direction at Monitoring Location

N

Figure No. 1



Proposed Project Northwest Winds

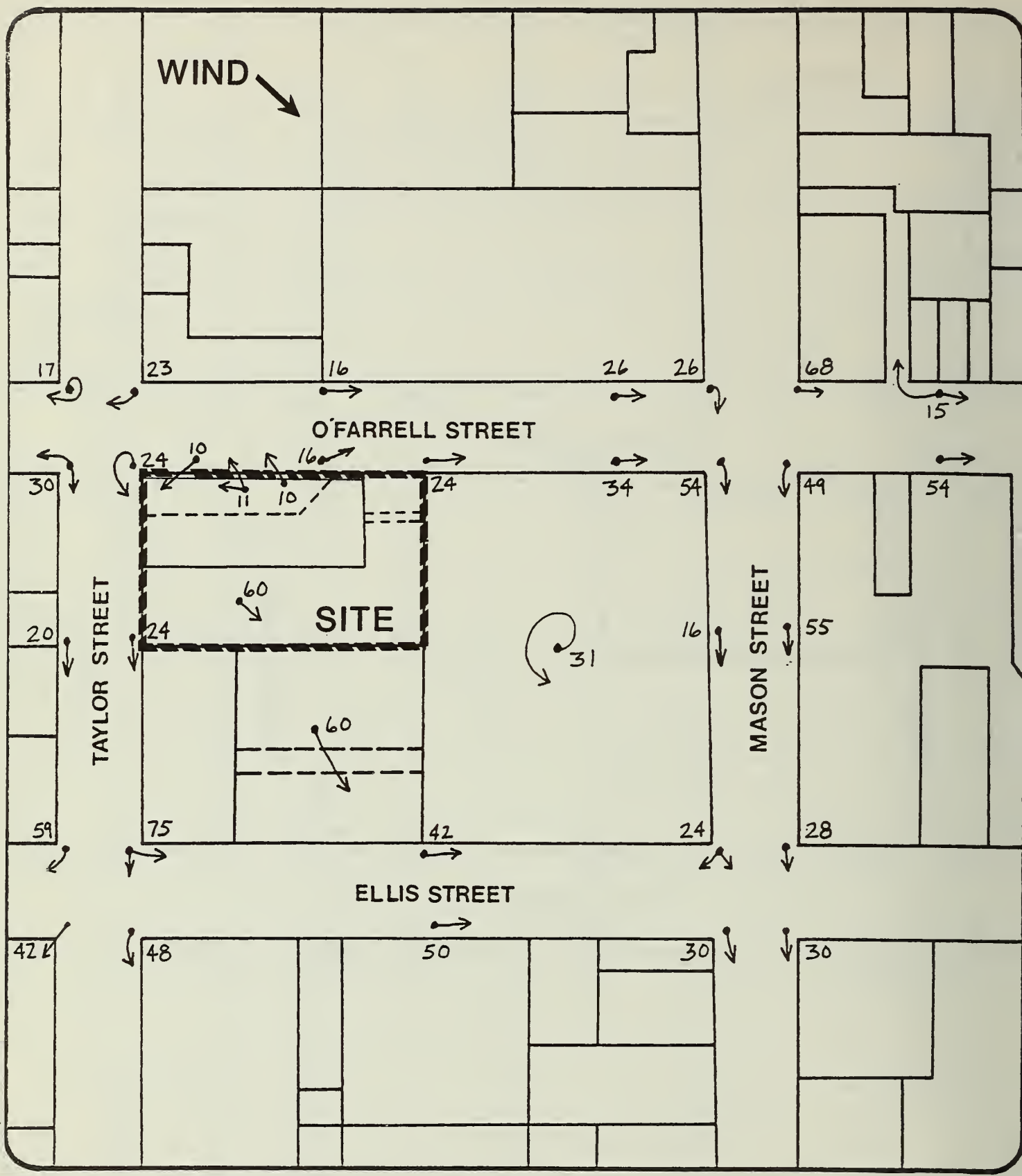
LEGEND

58 - Wind Speed Ratio at Monitoring Location

- Wind Direction at Monitoring Location

N

Figure No. 2



Alternative Project Northwest Winds

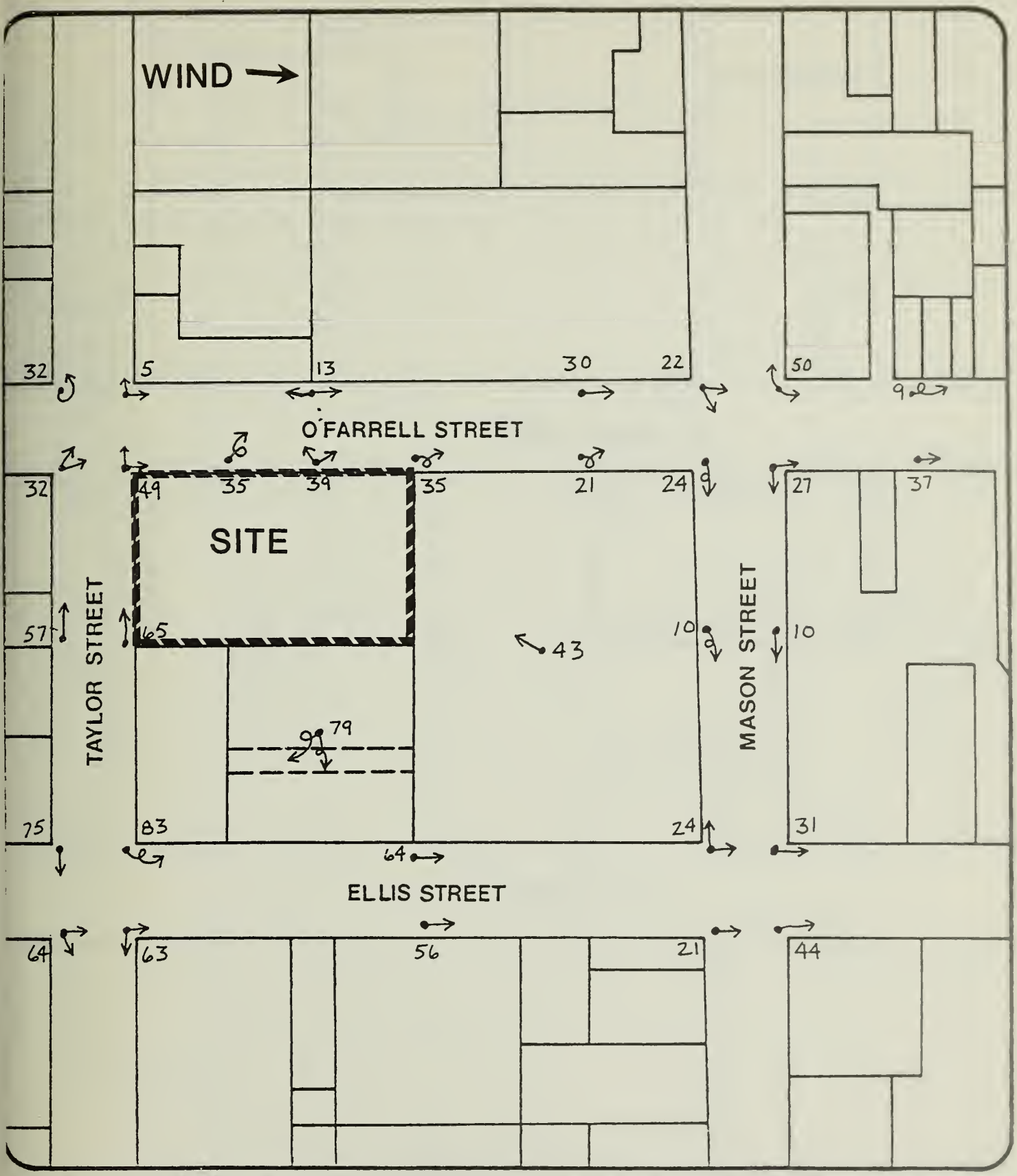
LEGEND

58 - Wind Speed Ratio at Monitoring Location

- Wind Direction at Monitoring Location

N

Figure No. 3



Existing Site West Winds

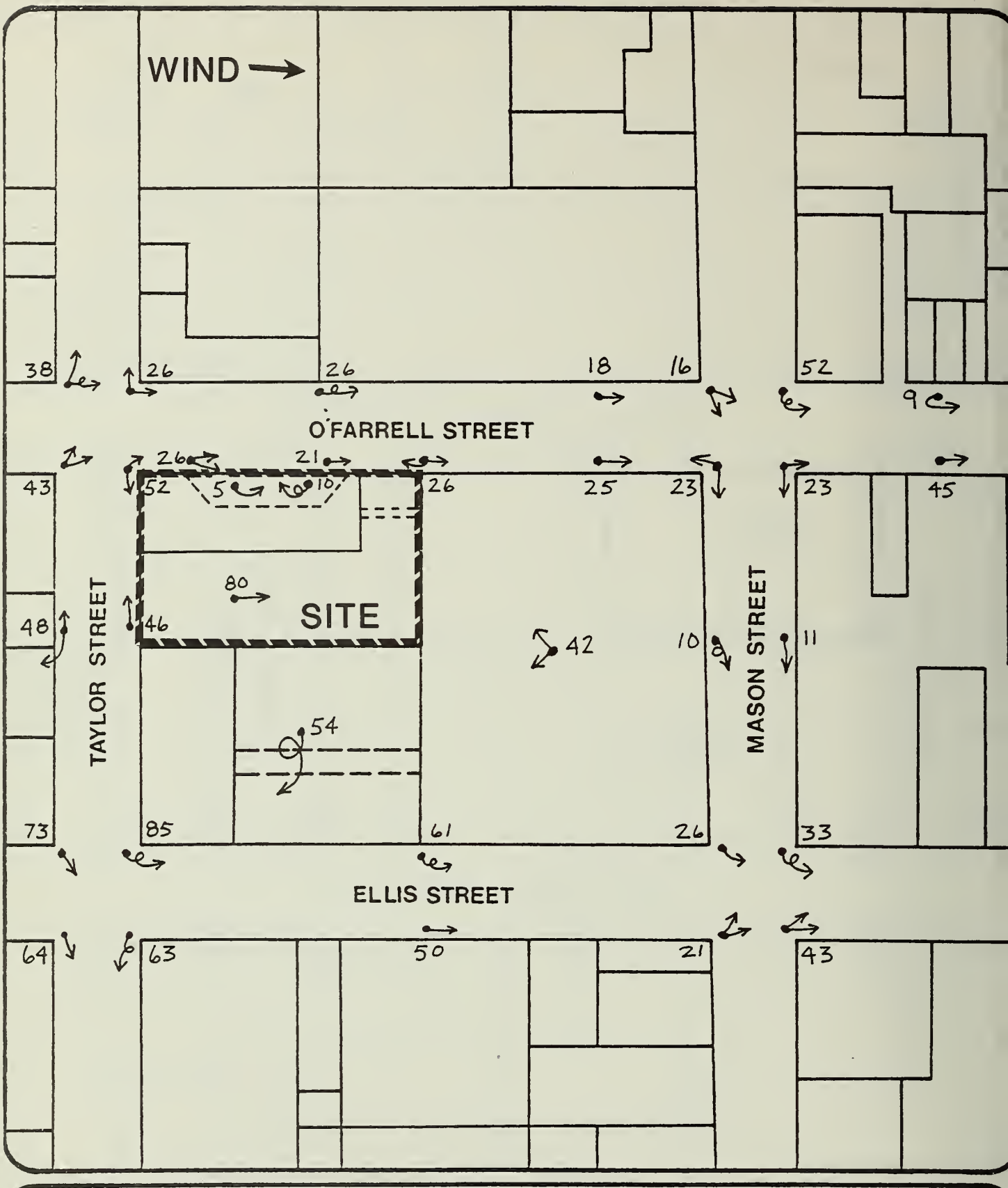
LEGEND

58 - Wind Speed Ratio at Monitoring Location

- Wind Direction at Monitoring Location

N

Figure No. 4



Proposed Project
West Winds

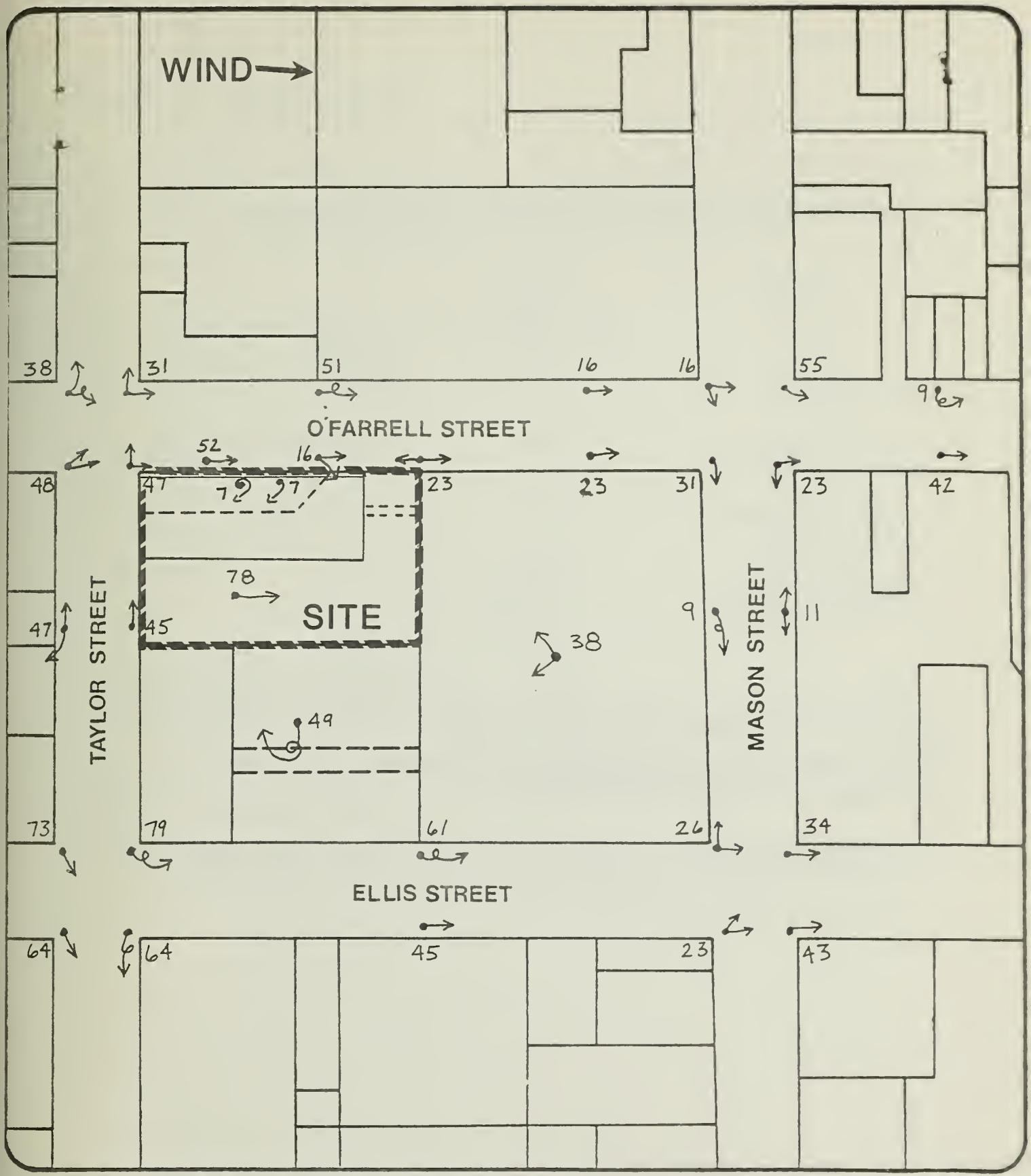
LEGEND

58 - Wind Speed Ratio at Monitoring Location

- Wind Direction at Monitoring Location

N

Figure No. 5



Alternative Project West Winds

LEGEND

58 - Wind Speed Ratio at Monitoring Location

- Wind Direction at Monitoring Location

N

Figure No. 6

APPENDIX D: ECONOMIC ASPECTS

TABLE D-1: DISTRIBUTION OF 1979-80 PROPERTY TAXES LEVIED ON BLOCK 325, EXISTING HILTON HOTEL AND TOWER AND PROJECT SITE

	1979-80 Total Composite Tax Rate*	Revenues**	Percent
City and County of San Francisco	4.219	655,100	85
San Francisco Unified School District	0.344	3,900	7
San Francisco Community College District	0.058	7,700	1
Bay Area Air Quality Management District	0.008	***	***
BART	0.341	53,900	7
TOTAL	$4.970	$770,700	100

*Tax rate is levied per $100 of assessed value.
**Revenues are rounded to nearest $100; based on total 1979-80 assessed valuation of $15,093,600 for two parcels.
***Less than 1% (0.16%) of the total tax rate.

SOURCE: Tax Collector, City and County of San Francisco, 1979-80 Important Tax Information.

APPENDIX D: ECONOMIC ASPECTS

TABLE D-2: 1979-80 ALLOCATION OF HOTEL ROOM TAX FUND, EXISTING HILTON HOTEL

	Percent	Revenues*
George R. Moscone Convention Center	50.00	1,045,400
Candlestick Park Bond Debts	6.23	130,300
Yerba Buena Low-Income Housing	6.23	130,300
Hotel Publicity and Advertising Fund	18.20**	380,500
General Fund	19.34**	404,400
TOTAL	100.00	$2,090,900

*Revenues rounded to nearest $100.
**The percentage of revenues allocated to these funds is determined each year by the Chief Administrative Officer and is subject to change each year.

NOTE: The 1.75% surcharge approved as Proposition O in the June 1980 elections, raising the Hotel Tax rate from 8% to 9.75%, will be allocated totally to the General Fund.

SOURCE: San Francisco Chief Administrative Office and Board of Supervisors, 22 May 1978, Hotel Room Tax Fund Allocation, Ordinance No. 251-78.

APPENDIX E: TRAFFIC AND PARKING

TABLE E-1: STREET RIGHT-OF-WAY CHARACTERISTICS - HILTON HOTEL VICINITY*

	Block	Flow	Number of Lanes	Width of Lanes (ft.)	Effective Width of Sidewalks (ft)	
5th St. No.	O'Farrell-Ellis	N	2 park 2	7 15	W-7	E-7
	Ellis-Eddy	N	1 park - RT 1 park 2	11 7 12	W-6	E-7
	Eddy-Market	N-S	1 Bus Loading (W curb) 1 N Bound 1 N Bound 1 S Bound 1 S Bound	8-1/2 11 10 9 13	W-12-1/2	E-14
Eddy	5th St. No. - Mason	E	2 park 3	7 10	N-9	S-10
	Mason-Taylor	E	2 park 3	7 10	N-9	S-9
	Taylor-Jones	E	2 park 3	7 10	N-9	S-8
Taylor	Eddy-Ellis	N	2 park 1 (ctr) 2	7 10 12	W-8	E-7
	Ellis-O'Farrell	N	2 park 1 (ctr) 2 + 7-1/2 Loading Bay - E curb	7 10 12	W-6	E-6
	O'Farrell-Geary	N	2 park 1 (ctr) 2	7 10 12	W-6	E-7

TABLE E-1: STREET RIGHT-OF-WAY CHARACTERISTICS - HILTON HOTEL VICINITY (cont.) - Page 2

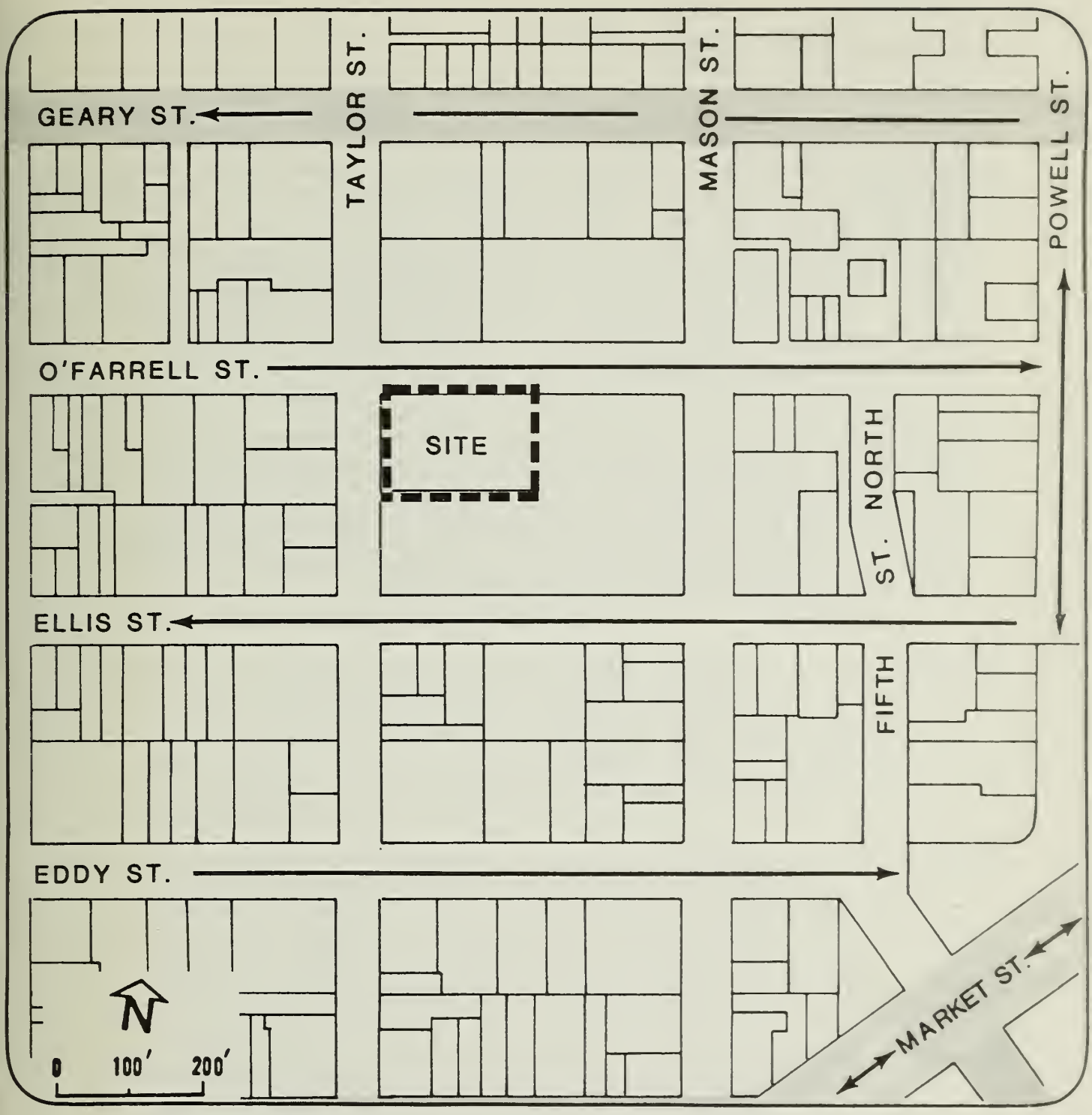
Street	Block	Flow	Number of Lanes	Width of Lanes (ft)	Effective Width of Sidewalks (ft)	
Geary	Jones-Taylor	W	1 park-thru	9-1/2	N-10	S-8
			1 park-thru	7		
			1 **	10		
			2	9		
	Taylor-Mason	W	1 park-thru	10	N-7	S-6
			1 park-thru	6		
			1**	12		
			2	9		
	Mason-Powell	W	2 park-thru**	10	N-8	S-12
			2	9		
Powell	Geary-O'Farrell	N - S	2 park	7-1/2	W-10	E-9
			2	11		
	O'Farrell-Ellis	N - S	2 park	7-1/2	W-10	E-9
	Ellis-Market	Mall - Cable Cars and Pedestrians				
Ellis	Powell - 5th St. No.	W	2 park	7	N-7	S-8
			3	10		
	5th St. No. - Mason	W	2 park	7	N-9	S-9
			3	10		
	Mason-Taylor	W	2 park	7	N-9	S-6
			3	10		
	Taylor-Jones	W	2 park	7	N-8	S-9
			3	10		
O'Farrell	Jones-Taylor	E	1 park-thru**	10	N-11	S-10
			1 park-thru	10		
			2	9		
	Taylor-Mason	E	1 park-thru**	10	N-10	S-6
			2	9		S-12
			1	10		
			+ 7-1/2 Loading Bay - S curb			

TABLE E-1: STREET RIGHT-OF-WAY CHARACTERISTICS - HILTON HOTEL VICINITY (cont.) - Page 3

Street	Block	Flow	Number of Lanes	Width of Lanes (ft)	Effective Width of Sidewalks (ft)	
O'Farrell	Mason - 5th St. No.	E	1 park-thru**	10	N-9	S-11
			2	9		
			1 (ctr)	10		
	5th St. No. - Powell	E	1 park-thru**	10	N-10	S-11
			2	9		
			1 (ctr)	10		
Mason	Geary-O'Farrell	S	2 park	7	W-8	E-11
			2	12		
	O'Farrell-Ellis	S	2 park	7	W-7	E-12
			2	12		
	Ellis-Eddy	S	2 park	7	W-10	E-9
			2	12		
Jones	Geary-O'Farrell	S	2 park	7	W-10	E-10
			1	12		
			1	10		
			1	9		
Jones	O'Farrell-Ellis	S	2 park	7	W-10	E-9
			1	11		
			1	10		
			1	9		
	Ellis-Eddy	S	2 park	7	W-10	E-9
			1	11		
			2	9-1/2		

*The study area was bounded by Fifth St. North and Eddy, Jones, Geary, Powell and Ellis Sts.
**Diamond Lane

SOURCE: On-site field measurements made by John J. Forristal, Consulting Traffic Engineer, Sunday, 17 February 1980. Area could be added to the narrow parking lanes; however, width then must be subtracted from the adjacent traveled lane. The measurements are the best estimate of conditions which seemed to prevail where parking stalls were not designated.



LEGEND

MAJOR THROUGHFARE

TRANSIT PREFERENTIAL STREET

FIGURE E-1: MAJOR THROUGHFARES AND TRANSIT PREFERENTIAL STREETS

METHODOLOGY USED IN TRAFFIC ANALYSIS

The capacity analysis of each intersection surrounding the project site at which a turning movement count was made utilized the "critical lane" method of analysis. This method of capacity calculation is a summation of maximum conflicting approach lane values that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: a Planning Tool" by McInerney, Henry B. and Stephen G. Peterson, January 1971, Traffic Engineering). A maximum service volume for Level of Service "E" was assumed as the intersection capacity. The service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified level of Service (see Table E-2 for a description of service levels.) For each intersection analyzed, the existing p.m. peak hour occuring between 4:00 and 6:00 p.m. volume was computed and a volume-to-capacity (v/c) ratio was calculated by dividing the existing volume by the capacity at Level of Service E. Because of the heavier than normal pedestrian traffic in the site vicinity, the conventional value of 1,500 vehicles per hour of green time for Service Level E at the above referenced intersections was reduced to 1200 vehicles per hour for through lanes and 1000 vehicles per hour for turn lanes.

TABLE E-2 TRAFFIC LEVELS OF SERVICE

Level of Service	Description	Volume/Capacity (v/c) Ratio
A	Level of Service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.	0.60
B	Level of Service B is in the zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted. The lower limit (lowest speed, highest volume) of this level of service has been associated with service volumes used in the design of rural highways.	0.61-0.70
C	Level of Service C is still in the zone of stable flow,but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass. A relatively satisfactory operating speed is still obtained, with service volumes perhaps suitable for urban design practice.	0.71-0.80
D	Level of Service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.	0.81-0.90
E	Level of Service E cannot be described by speed alone, but represents operations at even lower operating speeds than in Level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.	0.91-1.00
F	Level of Service F describes forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of downstream congestion. In the extreme, both speed and volume can drop to zero.	1.00

SOURCE: Highway Research Board, 1965, Highway Capacity Manual, Special Report 87.

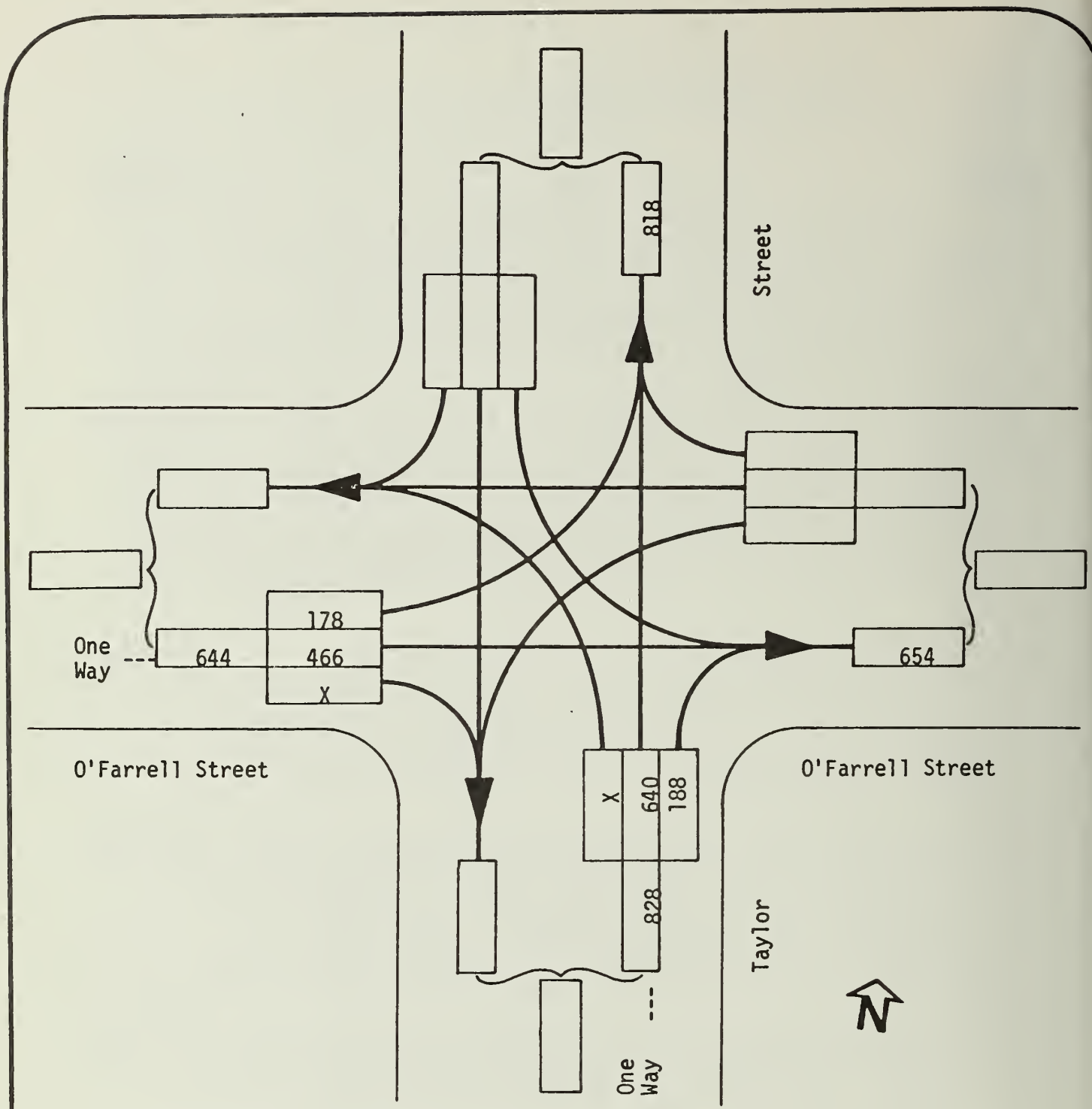


FIGURE E-2: INTERSECTION TURNING MOVEMENTS AT TAYLOR AND O'FARRELL STS.

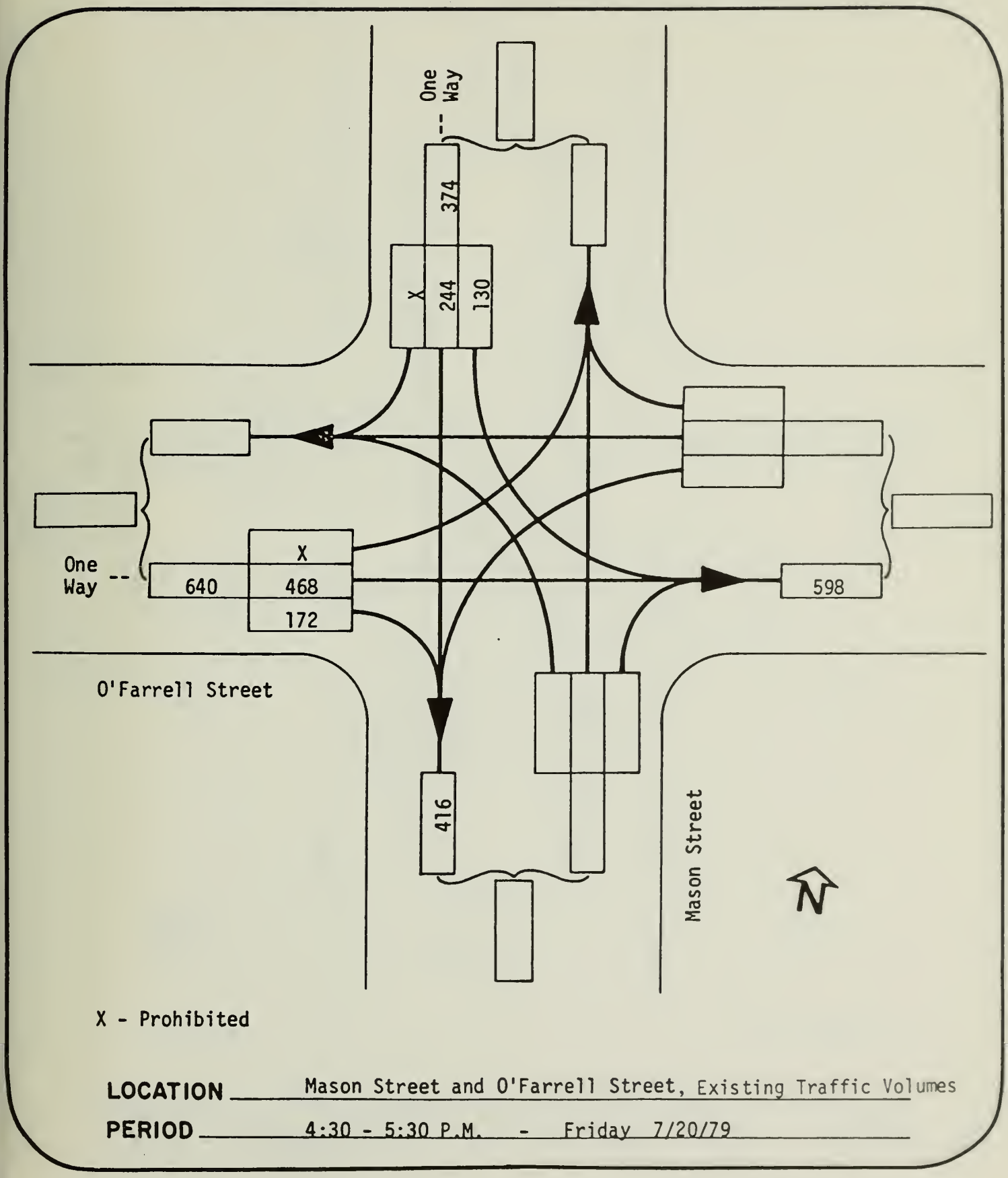


FIGURE E-3: INTERSECTION TURNING MOVEMENTS AT MASON AND O'FARRELL STS.

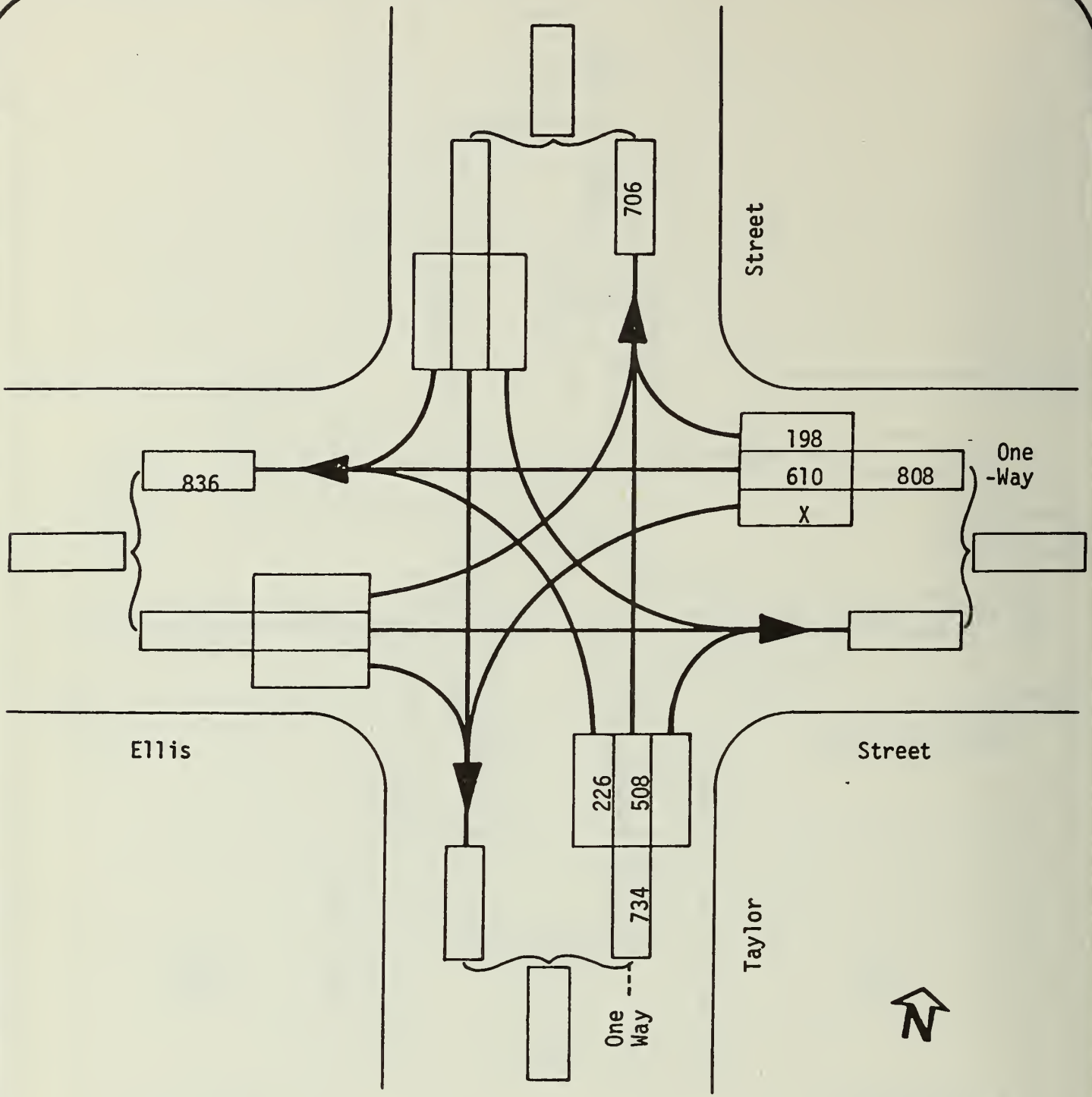


FIGURE E-4: INTERSECTION TURNING MOVEMENTS AT TAYLOR AND ELLIS STS.

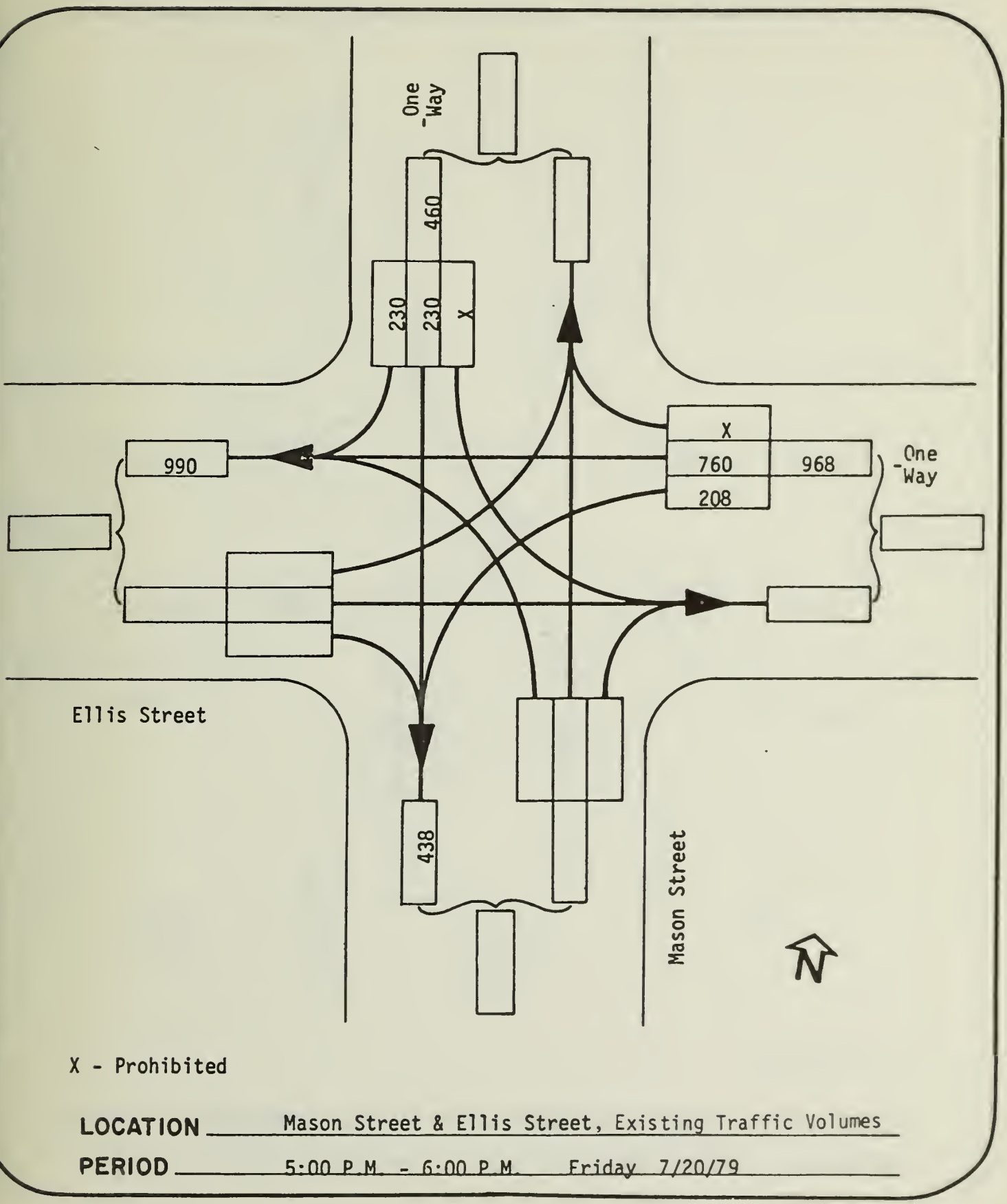


FIGURE E-5: INTERSECTION TURNING MOVEMENTS AT MASON AND ELLIS STS.

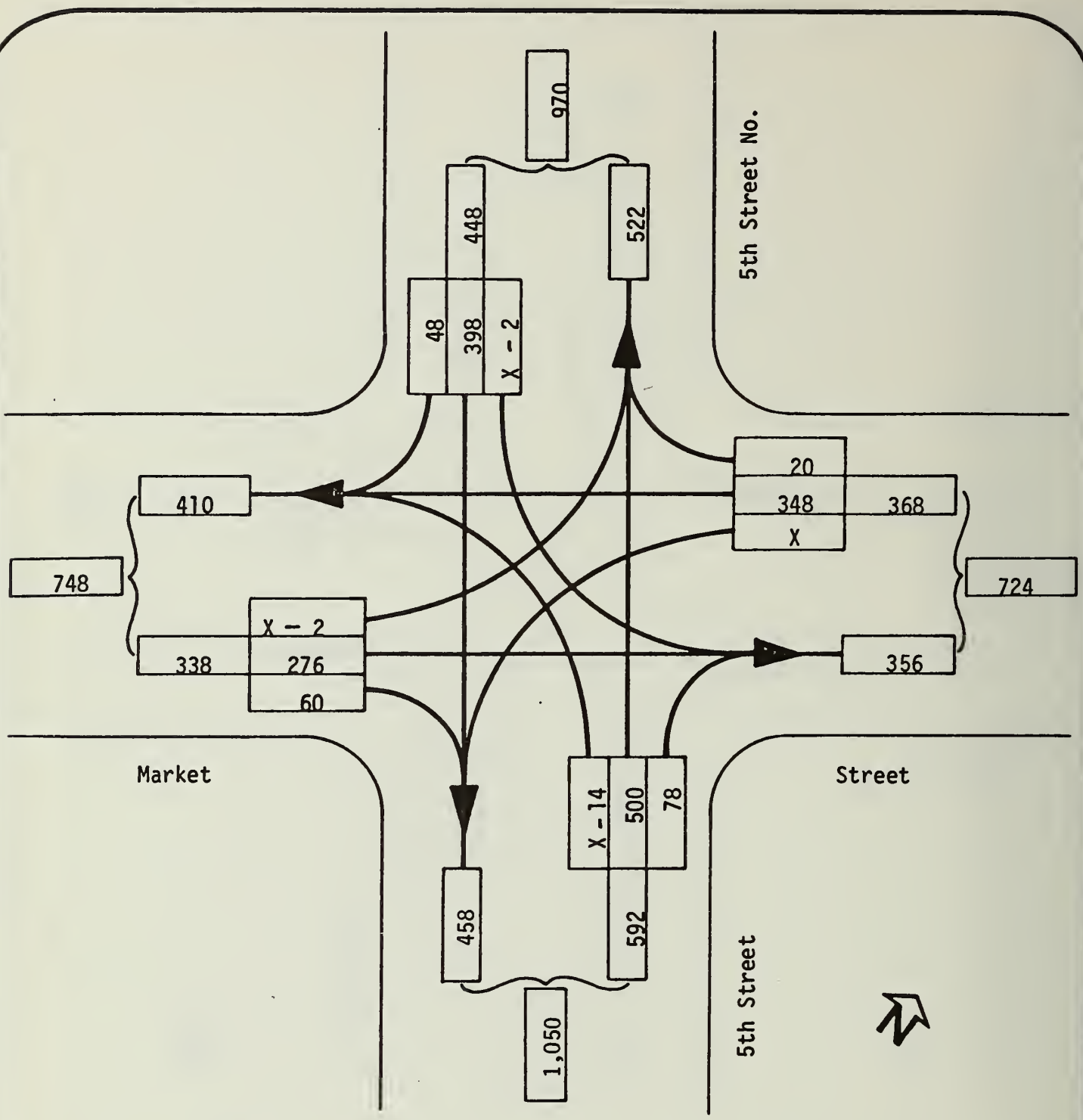
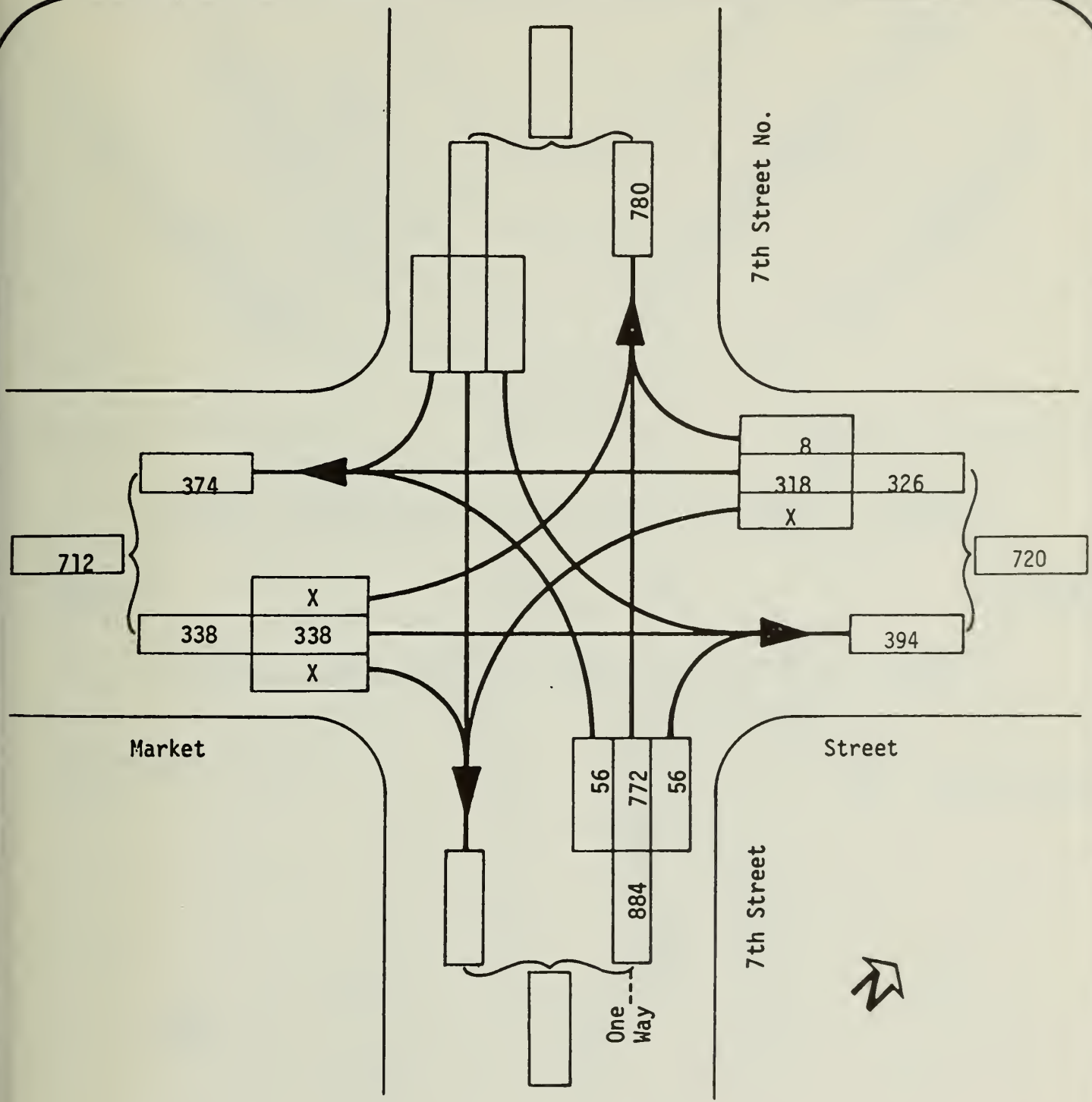


FIGURE E-6: INTERSECTION TURNING MOVEMENTS AT 5TH ST. - 5TH ST. NO. AND MARKET ST.



X - Prohibited

LOCATION 7th Street - 7th Street No. and Market Street, Existing Traffic Volumes

PERIOD 4:00 - 5:00 P.M. - Thursday 2/21/80

FIGURE E-7: INTERSECTION TURNING MOVEMENTS AT 7TH ST.-7TH ST. NO. AND MARKET ST.

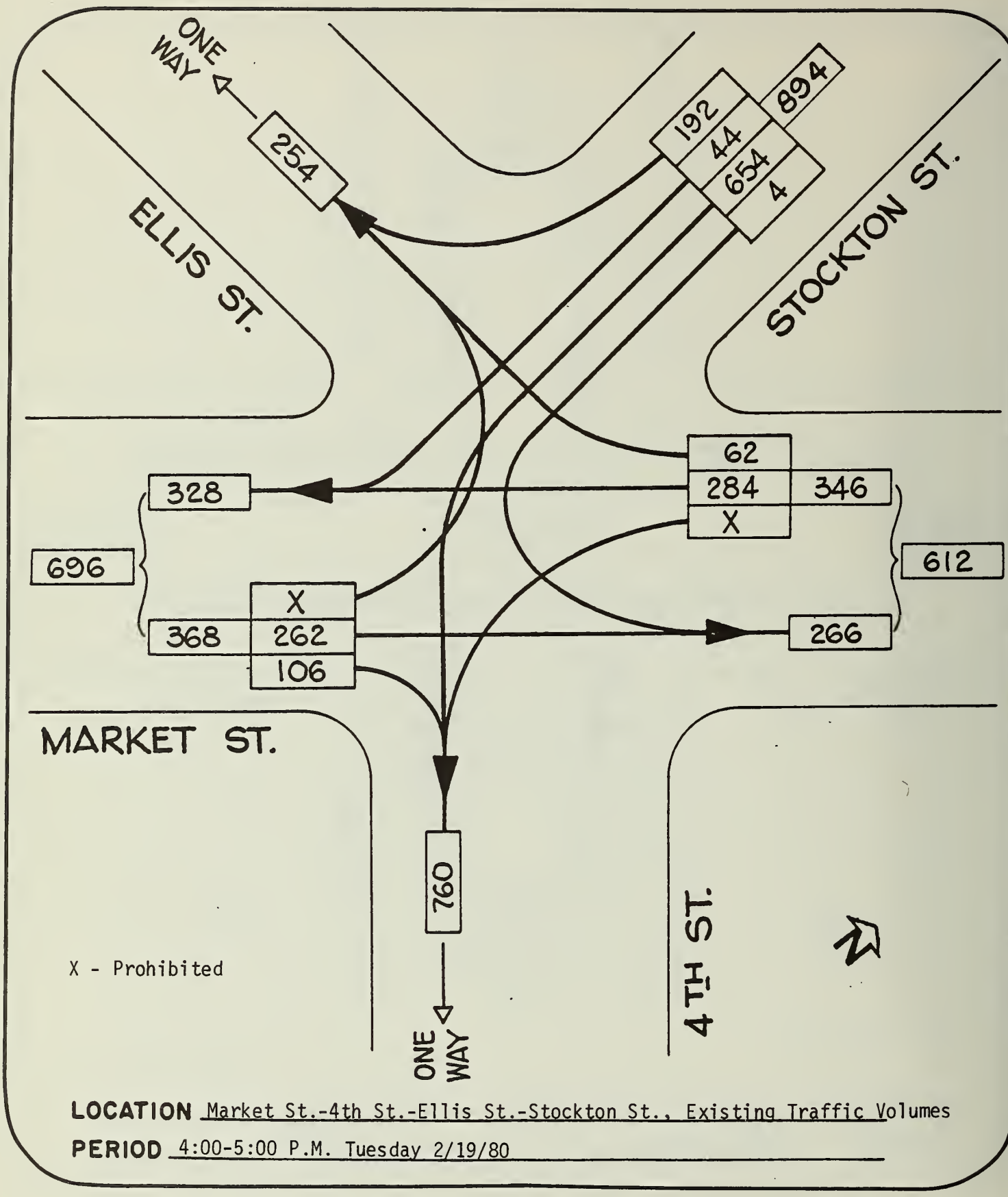


FIGURE E-8: INTERSECTION TURNING MOVEMENTS AT MARKET ST.-4TH ST.-ELLIS ST.-STOCKTON ST.

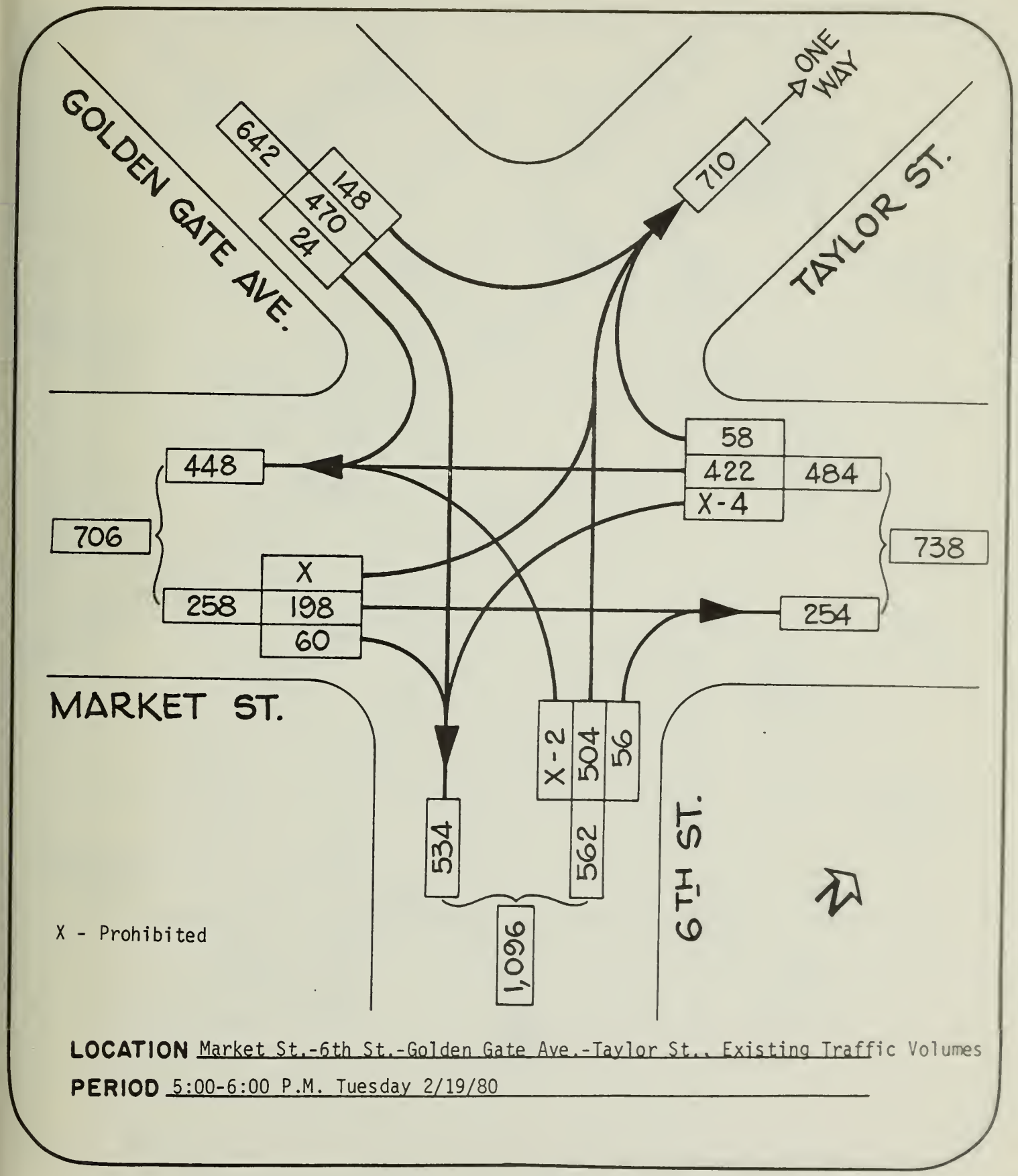


FIGURE E-9: INTERSECTION TURNING MOVEMENTS AT MARKET ST.-6TH ST.-GOLDEN GATE AVE.-TAYLOR ST.

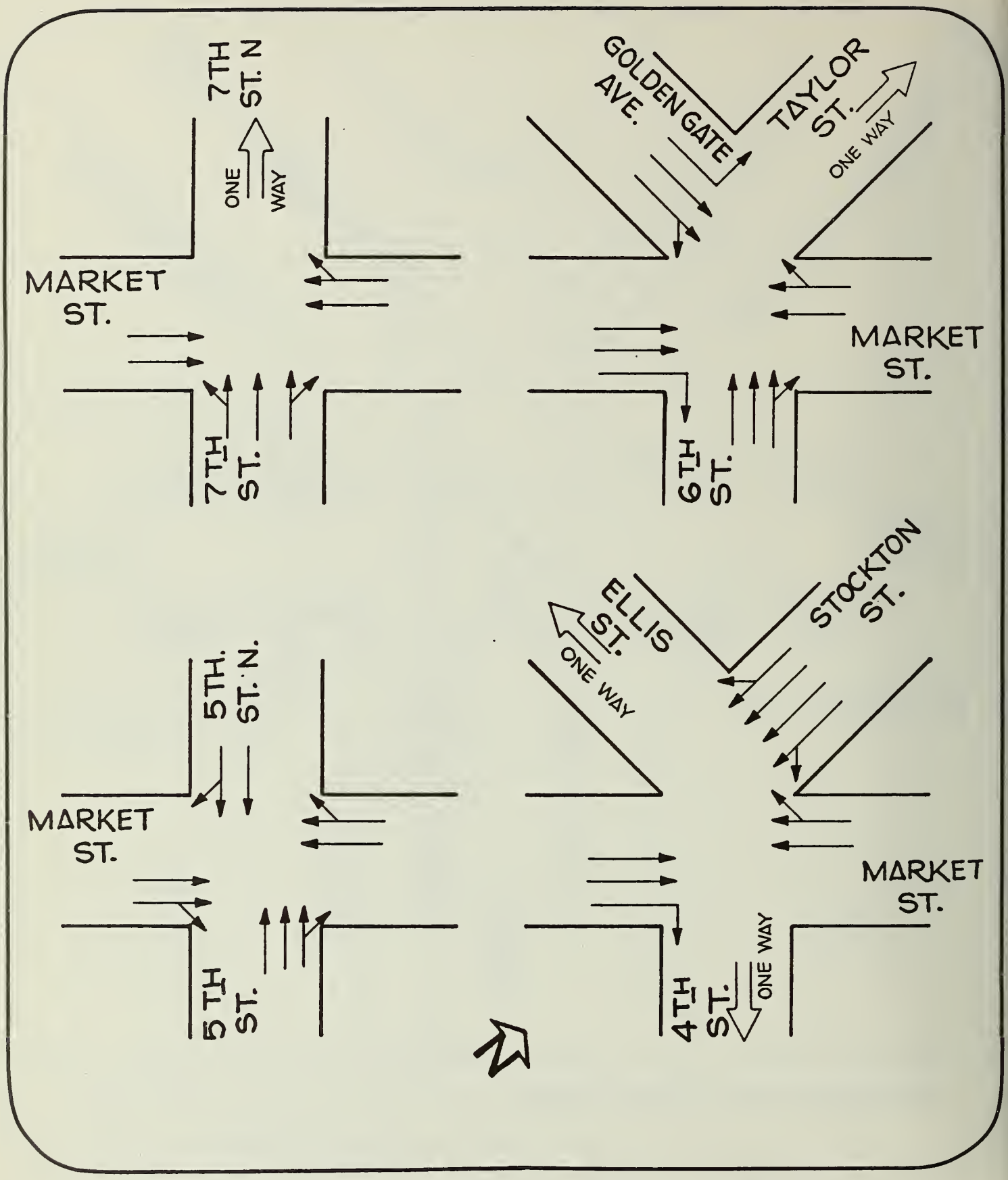


FIGURE E-10: INTERSECTION GEOMETRICS
MARKET ST. -FOURTH ST. TO SEVENTH ST.

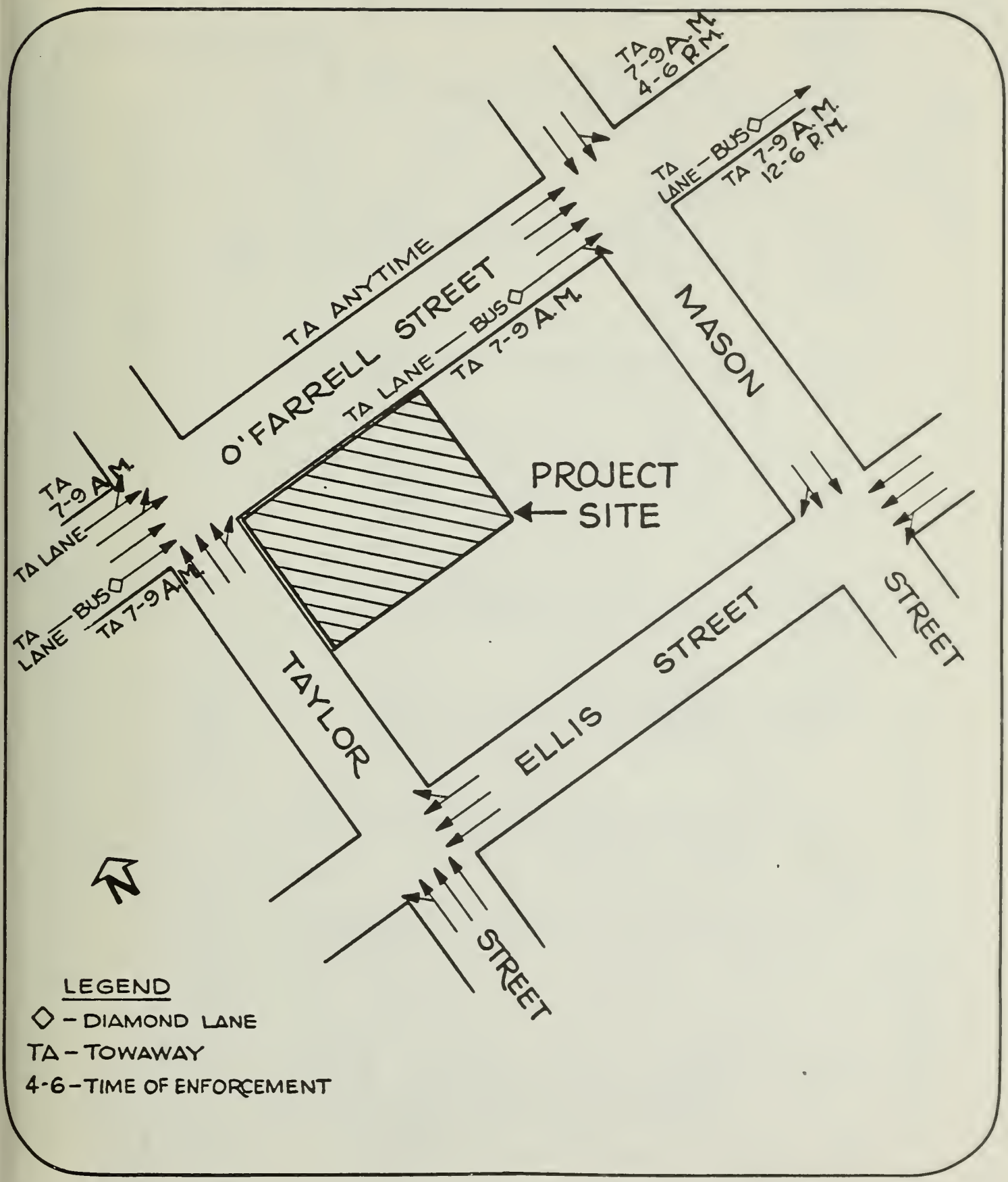


FIGURE E-11: STREET GEOMETRICS ADJACENT TO SITE AND HILTON HOTEL

TABLE E-3: OFF-STREET PARKING HILTON HOTEL VICINITY

Number*	Lot Location	Spaces Total	Spaces Rented	Time of Day Load	Time of Day Unload	Weekday Turnover	Weekday Vacancy	Weeknight Vacancy	Saturday Vacancy	Sunday Vacancy
1										
2	190 Ellis St.	80	10	9-10	4-6	(This is site of Holiday Inn project)				
3										
4	60 Ellis St.	1,000	200	8-12	4-6	1.3	200	800	600	700
5	80 Ellis St.	83	10	9-11	4-6	1.2	3	12	10	3
6	70 Eddy St.	150	45	10-11	4-6	(This is site of Hotel Ramada project)				
7	530 Taylor St.	110	50	11-2**	1-2	3.0	0	0	60	60
8	325 Mason St.	914	500	4-7	11-1:30 am***	2.0	200	200	600	600
9	165 Mason St.	20	0	7-8	3-4	2.0	0	0	6	19
10	121 Mason St.	47	0	7-8	3-4	2.0	0	0	20	38
11	15 Mason St.	200	100	8-9	4-6	1.5	70	20	70	80
12	120 Taylor St.	19	0	11-12	7-8	2.0	0	10	10	10
13	149 Eddy St.	32	NA	NA	NA	NA	1	NA	2	16
14	Eddy/Taylor St	65	NA	NA	NA	NA	5	NA	17	53
15	261 Ellis St.	350	100	8-11	5-6	1.1	75	200	150	200
16	Fifth St Garage	1,800	0+	5-9	by 7++	2.0	50-100	1,700	100-150	1,200
17	400 Taylor	150	0	10	4-5	0.6	50	20	15	40
18	141 Taylor	33	NA	NA	NA	NA	2	NA	30	30
19	60 Turk	92	50	12-2***	5	1.1	0+++	0+++	0+++	0+++
20	Hilton Hotel	213	0	NA	NA	0.5	110	100	NA	NA
Totals		5,358	1,065				766-816	3,062		

*Numbers correspond to those on Figure E-12
**Second load period 6:00 to 8:00 p.m.
***Second load period 6:00 to 10:00 p.m. - Second unload period 4:00 to 7:00 period
+Non-reserved, special rate use is 200 stalls
++Shopper traffic loads and unloads throughout the day between 8:00 a.m. and 7:00 p.m.
+++Theater times
NA: Not available

SOURCE: Survey of lot operators and on-site measurements made by John J. Forristal, Consulting Traffic Engineer

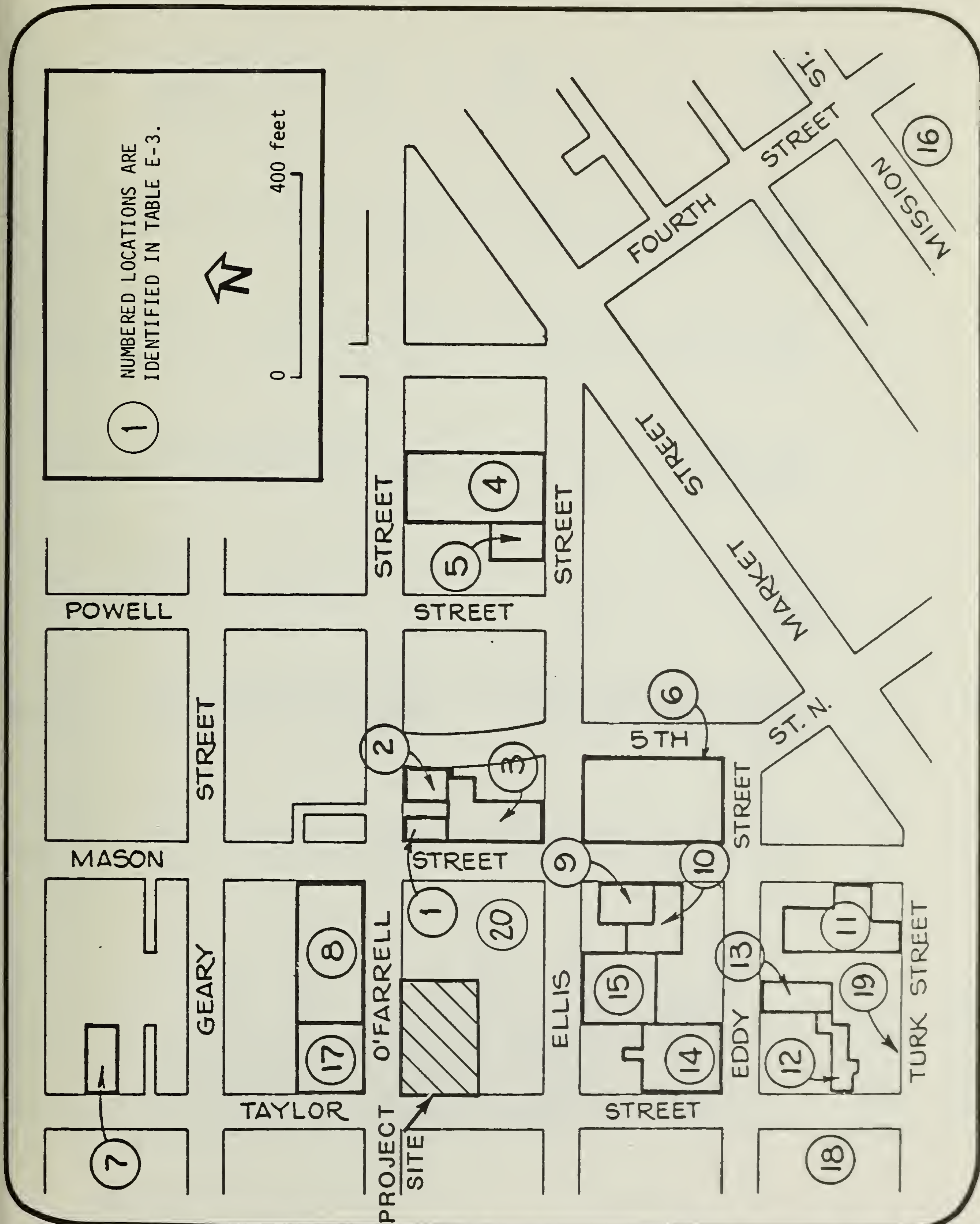


FIGURE E-12: OFF-STREET PARKING LOTS IN THE VICINITY

TABLE E-4: ON-STREET PARKING IN THE HILTON HOTEL VICINITY*

Street	Block	Metered Stalls	Limit (Min)	Metered Loading Stalls**	Limit (Min)	Yellow Zones	White Zones	Other Zones
Eddy	5th St. No.-Mason	3	30	1	30	2		
	Mason-Taylor	16	30	3	30	3	1	
	Taylor-Jones	18	60			4	3	
	Jones-Leavenworth	23	60			3	4	
Ellis	Stockton-Powell	6	30	2	30	6		
	Powell-5th St.	4	30	1	30	3	3	
	5th St. No. - Mason	3	30	1	30	3	3	
	Mason-Taylor	13	30			4	1	
	Taylor-Jones	12	60			4	4	
	Jones-Leavenworth	16***	60			4	2	4 Green
Geary	Grant-Stockton			11	30	4		
	Stockton-Powell					3	4	
	Powell-Mason	3	30	6	30	4	3	
	Mason-Taylor	10	30	4	30	4	2	
	Taylor-Jones	15	60			2	3	
	Jones-Leavenworth	17***	60			2	4	2 Green
Grant	Geary-O'Farrell	8	30	4	30	3	1	
Mason	Turk-Eddy	10	30			2	2	
	Eddy-Ellis	8	30	4	30	3	1	
	Ellis O Farrell	10	30				1	
	O'Farrell-Geary							1 Taxi
	Geary-Post	2	30	2	30	4	2	
	Post-Sutter	8	30			5	1	
Post	Grant-Stockton			6	30	4	4	
	Stockton-Powell			2	30	4	4	
	Powell-Mason	4	30	2	15	4	5	1 Taxi
	Mason-Taylor	6	30	3	30	2	4	
	Taylor-Jones	15	60			2	5	
	Jones-Leavenworth	17	60			3	3	

TABLE E-4: ON-STREET PARKING IN THE HILTON HOTEL VICINITY (cont.)

Street	Block	Metered Stalls	Limit (Min)	Metered Loading Stalls**	Limit (Min)	Yellow Zones	White Zones	Other Zones
Taylor	Golden Gate-Turk	7	30	5	30	3	2	
	Turk-Eddy	5	30	4	30	3	3	
	Eddy-Ellis	7	30	4	30	1		
	Ellis-O'Farrell	4	30	1	30	1	3	1 Taxi
	O'Farrell-Geary	3	30	3	30	2	4	
	Geary-Post	5	30	2	30	4	2	
	Post-Sutter	13	30	1	30	3	2	
Turk	Mason-Taylor	13	30	3	30	2	2	
	Taylor-Jones	14	60			4	1	
	Jones-Leavenworth	13	60			5	1	
Jones	McAllister-Golden Gate	13	30			3	2	
	Golden Gate-Turk	9	60			1	2	
	Turk-Eddy	14	60	1	15	4	2	
	Eddy-Ellis	16	60			1	2	
	Ellis-O'Farrell	20	60			1		
	O'Farrell-Geary	13	60			2	4	
	Geary-Post	15	60				1	
	Post-Sutter	15	60				1	
O'Farrell	Grant-Stockton	4	30	3	30	3	1	
	Stockton-Powell			2	30	4	3	
	Powell - 5th St. No.	1	30	2	30	3	4	
	5th St. No. - Mason	3	30	2	30	3	4	
	Mason-Taylor	6 No Limit Stalls						
	Taylor-Jones	1	30	4	30	3	4	
	Jones-Leavenworth	23**	60			2	3	2 Green
Powell	Ellis-O'Farrell					4	4	1 Taxi
	O'Farrell-Geary					4	3	2 Taxi
	Geary-Post						2	1 Taxi
	Post-Sutter						2	1 Taxi
Stockton	Ellis O'Farrell	2	30	5	30	3		
	O'Farrell-Geary	5	30	5	30	1	2	

TABLE E-4: ON-STREEET PARKING IN THE HILTON HOTEL VICINITY (cont.)

Street	Block	Metered Stalls	Limit (Min)	Metered Loading Stalls**	Limit (Min)	Yellow Zones	White Zones	Other Zones
Stockton	Geary-Post					2	2	
	Post-Sutter	4	30	4	30	2	4	
Golden Gate	Taylor-Jones	12	60					
	Jones-Leavenworth	18	60			7	1	
Market	Stockton-Grant							1 Ldg. Bay
	Stockton-Powell							2 Ldg. Bays
	Mason-Taylor							3 Ldg. Bays
	Taylor-Jones							2 Ldg. Bays
Leavenworth	McAllister-Golden Gate	17	60			1		
	Golden Gate-Turk	10	60			3	1	
	Turk-Eddy	20	60			1	2	
	Eddy-Ellis	20	60			2		
	Ellis-O'Farrell	16 (Not Metered)	60				1	1 Green
	O'Farrell-Post	16 (Not Metered)	60			1	2	
	Post-Sutter	14 (Not Metered)	60			4	1	
Fifth North	Market-Eddy	No Parking			2	1		
	Eddy-Ellis	15	30			2	1	
	Ellis-O'Farrell	21	30			1		
Fourth	Market-Mission	16	30			3	3	1 Handicpd
Fifth	Market-Mission	6	30	2	30	5	2	
Sixth	Market-Mission	15	30	8	30	7	1	
McAllister	Jones-Leavenworth	12	60			2	2	

*The study area surveyed was bounded by McAllister, Leavenworth, Sutter, Grant Mission and Market; Sutter, Grant and Mission Sts. themselves were not surveyed.
**Reserved for truck loading in AM or PM; otherwise available as metered stalls.
***Not metered or marked: Number based on observed use.
SOURCE: Division of Traffic Engineering records and field measurements, Tuesday, 12 February 1980.

APPENDIX F: PEDESTRIANS

TABLE F-1: PEDESTRIAN FLOWS

Flow Regime	Walking Speed Choice	Conflicts	Flow Rate (P/F/M)* Average
Open	Free Selection	None	0.5
Unimpeded	Some Selection	Minor	0.5-2
Impeded	Some Selection	High Indirect Interaction	2-6
Constrained	Some Restriction	Multiple	6-10
Crowded	Restricted	High Probability	10-14
Congested	All Reduced	Frequent	14-18
Jammed**	Shuffle Only	Unavoidable	18+**

*P/F/M = Pedestrians per foot of sidewalk width per minute.
**For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE. Pushkarev, Boris and Jeffrey M. Zupan, Urban Space for Pedestrians, Cambridge, MA, MIT Press, 1975.

TABLE F-2: 1980 WEEKDAY P.M. PEAK-HOUR PEDESTRIAN VOLUMES AT INTERSECTIONS ADJACENT TO THE PROJECT SITE

STREET CROSSED	INTERSECTING STREET	CURBLINE	VOLUME
Taylor St.	O'Farrell St.	N	334
		S	276
O'Farrell St.	Taylor St.	E	238
		W	350
Taylor St.	Ellis St.	N	418
		S	281
Ellis St.	Taylor St.	E	312
		W	324
Mason St.	O'Farrell St.	N	204
		S	372
O'Farrell St.	Mason St.	E	252
		W	350
Mason St.	Ellis St.	N	197
		S	278
Ellis St.	Mason St.	E	163
		W	197

TABLE F-3: 1980 PEDESTRIAN TRAFFIC CROSSING AT MARKET ST.

CROSSING POINT	CURBLINE	12M-1PM	4:30-5:30	EST 24 HOURS
Seventh St.	West	461	394	4,900
	East	801	684	8,400
Sixth St.	West	331	284	3,500
	East	557	476	5,900
Fifth St.	West	622	532	6,500
	East	927	792	9,800
Powell St.		2,341	1,994	24,600
Fourth St.	West	412	352	4,300
	East	686	586	7,200

APPENDIX G: SAN FRANCISCO AIR QUALITY

Meteorological characteristics such as wind patterns and thermal inversions determine the movement and dispersion of air pollutants. The prevailing wind directions in San Francisco are from the west and northwest. Wind frequencies and speeds are generally highest in the summer. Light-variable (calm) wind conditions occur approximately 25% of the time on an annual basis. A thermal inversion (an inverted vertical temperature structure of the atmosphere consisting of warm air above cool air) is a stable atmospheric condition that inhibits the upward dispersion of air pollutants and traps them in a layer near the ground. High-altitude subsidence inversions, associated with warm descending air in a high-pressure cell which may last for several days, occur most of the time in summer and fall. Low-altitude radiation inversions, caused by radiation of heat from the earth's surface into cold nighttime air and usually dissipating by noon, occur most of the time in winter.

San Francisco's air quality is generally more free of pollutants than that of other developed portions of the Bay Area, because much of San Francisco is usually upwind of major pollutant sources such as industries, airports, freeways and other pollutant-generating urban activities. Thus, San Francisco rarely receives pollutants from other areas, although pollutants from the City blow to other parts of the Bay area.

When light-variable wind conditions are coupled with thermal inversions, creating air stagnation, high concentrations of pollutants can build up. Such conditions typically occur during the fall, the period of heaviest photochemical smog. Carbon monoxide (CO), suspended particulate (SP), hydrocarbons (HC) nitrogen dioxide (NO_2) ozone (O_3), and sulfur dioxide (SO_2) are major pollutants in the San Francisco area. Carbon monoxide is a toxic gas whose main source is motor vehicle exhaust. It tends to be a local problem near areas with high traffic volumes and poor ventilation. Particulates have many sources including wind-blown dust, fires, industrial processes, construction activities, and atmospheric photochemical reactions between other pollutants. Small-sized particles can reduce visibility and can contribute to respiratory health problems.

Hydrocarbons and nitrogen oxides react in the atmosphere in the presence of sunlight to produce oxidants such as ozone which can cause eye irritation and respiratory difficulties, and damage vegetation. In addition, nitrogen oxides reduce visibility. Sulfur dioxide reacts by a variety of mechanisms, including oxidation in water droplets, and oxidation in the presence of light and NO_2 and some hydrocarbons, producing sulfuric acid and sulfate ion. Sulfur dioxide and sulfuric acid are respiratory irritants; sulfur dioxide (in sufficiently high concentrations) is known to damage leaves of some plants.

The Bay Area Air Quality Management District (BAAQMD) monitoring station at 939 Ellis Street is located on the roof of the nine-story building. While measurements there indicate daily, seasonal and annual meteorological and air quality trends, it is not clear how well the measurements represent conditions at street level near the station or elsewhere in the City.

TABLE G-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1977-1979

STATION: 939 Ellis Street, San Francisco

POLLUTANT:	STANDARD	1977	1978	1979
OZONE (O_3) (Oxidant)				
1-hour concentration (ppm /a/)				
Highest hourly average	(0.08) 0.12	0.05	0.11	0.08
Number of standard excesses	/b,c/	(0) 0	(4) 0	0
Expected Annual Excess/c/		0.3	0.3	0.0
CARBON MONOXIDE (CO)				
1-hour concentration (ppm)				
Highest hourly average	35/b/	16	17	20
Number of standard excesses		0	0	0
8-hour concentration (ppm)				
Highest 8-hour average	9/b/	8.9	9.4	13.8
Number of standard excesses		0	1	2
NITROGEN DIOXIDE (NO_2)				
1-hour concentration (ppm)				
Highest hourly average	0.25/d/	0.21	0.30	0.16
Number of standard excesses		0	4	0
SULFUR DIOXIDE (SO_2)				
24-hour concentration (ppm)				
Highest 24-hour average	0.05/d/	0.035	0.024	0.034
Number of standard excesses/e,f/		0	0	0
TOTAL SUSPENDED PARTICULATE (TSP)				
24-hour concentration (ug/m^3 /g/)				
Highest 24-hour average	100/d/	105	128	117
Number of standard excesses/f/		1	1	1
Annual concentration (ug/m^3)				
Annual Geometric Mean	60/d/	41	42	42
Annual standard excess		No	No	No

/a/ ppm: parts per million.
/b/ National standard, not to be exceeded more than once per year (except for annual standards which are not to be exceeded).
/c/ The national ozone standard was revised from 0.08 ppm to 0.12 ppm in January 1979. The number of excesses shown in parentheses is of the old 0.08 ppm standard in effect at the time. Expected Annual Excess is a three-year average of annual excesses of the new 0.12 ppm standard.
/d/ California standard not to be equaled or exceeded.
/e/ The sulfur dioxide standard is considered to be exceeded only if there is a concurrent excess of the state ozone or suspended particulate standards at the same station. Otherwise, the national standard of 0.14 ppm applies.
/f/ Number of observed excess days (measurements taken once every six days).
/g/ ug/m^3: micrograms per cubic meter.
SOURCE: BAAQMD, 1977 - 1979, Contaminant and Weather Summaries.

APPENDIX H: FUNDAMENTAL ACOUSTICAL CONCEPTS/1/

Three characteristics of environmental noise are important in determining subjective response: the intensity or level of the sound, the frequency spectrum of the sound, and the time-varying character of the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure Sound levels are usually measured and expressed in the logarithmic scale of decibels (dB), with 0 dB corresponding roughly to the threshold of hearing. Measurements in decibels must be added according to logarithmic rules; for example, two individual 80 dB sounds occurring simultaneously create a composite sound level of 83dB.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or Hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in sound level. The quantitative expression of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into nine segments.

Many rating methods have been devised to permit comparisons of quite different sounds. Fortunately, the simplest method correlates with human response almost as well as the more complex methods (Parkin 1964 and Botsford 1969). This method consists of evaluating the content of a sound in accordance with a weighting that reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange. The weighting curve used is called "A" weighting, and the level so measured is called the "A-weighted sound level", or simply the "A-level".

The A-level in decibels is expressed as "dBA"; the appended letter "A" is a reminder of the particular kind of weighting used for the measurement. Typical A-levels measured in the environment and in industry are shown in Table H-1.

Although the A-level may adequately describe environmental noise at any instant in time, community noise level varies continuously. Most environmental noise includes a conglomeration of distant noise sources which creates a relatively steady background noise in which no particular source is identifiable. These distant sources may include traffic, wind in trees, industrial activities, etc. These noise sources are relatively constant from moment to moment, but vary slowly as natural forces change or as human activity follows its daily cycle. Superimposed on this slowly varying background is a succession of identifiable noisy events, which may include single vehicle passages, aircraft flyovers, etc.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used (Kittelson, et al., 1964, Griffiths, et al., 1968, Olson 1970, Scholes 1970, Gordon, et al., 1971). The L10, as used in this report, is the A-weighted sound level

equaled or exceeded during 10% of a stated time period. The L10 is considered by noise engineers to be a good measure of the "average peak" noise. The L50 is the A-weighted sound level that is equaled or exceeded 50% of a stated time period. The L50 represents the median sound level. The L90 is the A-weighted sound level equaled or exceeded during 90% of a stated time period. The L90 is used to describe background noise.

As it is often cumbersome to describe the noise environment with these statistical descriptors, a single number descriptor called the Leq is becoming widely used. The Leq is defined as the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

During nighttime hours, exterior background noise levels are generally lower than daytime levels. Most household noise also decreases at night, and exterior noises become very noticeable. Further, most people are sleeping at night and are very sensitive to noise intrusion.

To account for human sensitivity to nighttime noise levels the descriptor Ldn (day-night equivalent sound level) was developed. The Ldn is the A-weighted average sound level in decibels during a 24-hour period with a 10 dB weighting applied to nighttime (10:00 p.m. to 7:00 a.m.) levels. For highway noise environments the Leq during the peak traffic hour is approximately equal to the Ldn.

The effects of noise on people may be listed in three general categories:

1) subjective effects of annoyance, nuisance, dissatisfaction;
2) interference with activities such as speech, sleep, learning;
3) physiological effects such as startle, hearing loss.

The sound levels associated with environmental noise, in most cases, produce effects only in the first two categories. Unfortunately, there is as yet no satisfactory measure of the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise (Stevens, et al. 1955).

An important parameter in determining a person's subjective reaction to a new noise is the existing noise environment to which one has adapted: the so-called "ambient" noise. "Ambient" is defined in the San Francisco Noise Ordinance as "the all-encompassing noise associated with a given environment, being a composite of sounds from many sources, near and far" (S.F. Municipal Code 1972). In general, the more a new noise exceeds the previously existing ambient, the less acceptable the new noise will be judged by the hearers (Galloway, et al. 1969).

TABLE H-1: TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND IN INDUSTRY

	DECIBELS A-WEIGHTED	
CIVIL DEFENSE SIREN (100')	140	
JET TAKEOFF (200')	130	THRESHOLD OF PAIN
	120	
RIVETING MACHINE	110	ROCK MUSIC BAND
EMERGENCY ENGINE-GENERATOR (6') DC-10 FLYOVER (700')	100	PILE DRIVER (50')
SUBWAY TRAIN (20')	90	BOILER ROOM PRINTING PRESS PLANT
PNEUMATIC DRILL (50')	80	GARBAGE DISPOSAL IN HOME (3') INSIDE SPORTS CAR, 50 MPH
FREIGHT TRAIN (100') VACUUM CLEANER (10') SPEECH (1')	70	
	60	AUTO TRAFFIC NEAR FREEWAY LARGE STORE ACCOUNTING OFFICE
LARGE TRANSFORMER (200')	50	PRIVATE BUSINESS OFFICE LIGHT TRAFFIC (100') AVERAGE RESIDENCE
	40	MINIMUM LEVELS, RESIDENTIAL AREAS IN SAN FRANCISCO AT NIGHT
SOFT WHISPER (5')	30	
RUSTLING LEAVES	20	RECORDING STUDIO
	10	
THRESHOLD OF HEARING IN YOUTHS (1000-4000 Hz)	0	

NOTE: The distance (in feet) between the source and listener is shown in parentheses.

SOURCE: Charles M. Salter Associates, Inc.

Knowledge of the following relationships will be helpful in understanding the quantitative sections of the EIR (Stevens, et al. 1955, Beranek 1954):

1) Except in carefully controlled laboratory experiments, an increase of only 1 dB in A-level cannot be perceived.
2) Outside of the laboratory, a 3 dB increase in A-level is considered a just-noticeable difference.
3) A change in A-level of at least 5 dB is required before any noticeable change in community response would be expected.
4) A 10 dB increase in A-level is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response. Increases of more than 10 decibels would be expected to provoke complaints.

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NOTE- Appendix H

/1/ Modified from Salter, Charles M., Associates, Inc., May 1979, "Appendix M: Fundamental Accoustical Concepts" in San Francisco City Planning Commission, Environmental Impact Report for 101 California Street, EE 78.27.